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CONFERENCE PROCEEDINGS
THE PICK-SLOAN MISSOURI BASIN PLAN

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AUGUST 10-11, 1983
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The Missouri Basin States Association is a nonprofit organization incorporated in the State of Nebraska on September 18, 1981. Its stated purpose is to ". . . conduct, encourage and participate in activities which promote interstate coordination of water resources management within the Missouri River Basin . . . ." The Association is governed by a 20-member Board of Directors composed of two members from each of the 10 states within the Missouri River Basin (Colorado, Iowa, Kansas, Minnesota, Missouri, Montana, Nebraska, North Dakota, South Dakota, and Wyoming). The Association's office address is:

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CONFERENCE PROCEEDINGS
THE PICK-SLOAN MISSOURI BASIN PLAN

August 10-11, 1983
Marriott Hotel Des Moines, Iowa

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MEMORANDUM

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TO: State and University Libraries in the Missouri River Basin

FROM: Carroll M. Hamon, Executive Director Carroll M. Hamon

SUBJECT: Proceedings of the Pick-Sloan Missouri Basin Plan Conference

DATE: December 13, 1983

On December 22, 1944, the U.S. Congress passed the 1944 Flood Control Act which contained what has become popularly known as the Pick-Sloan Missouri Basin Plan. The plan contained one of the most ambitious water development programs ever envisioned in the United States. Completion of many of the projects included in the plan has solved serious water problems in the Missouri River basin, but in some cases has created others. For example, the six huge dams from Montana to Nebraska on the main stem Missouri River have provided untold benefits in flood control, navigation, irrigation, recreation, water supply and electric power generation during the last several decades; but problems with downstream bank erosion, water level changes and detriments to fish, wildlife and recreation have also occurred and many of the projects originally envisioned or added at later dates have not been built.

Beginning in 1981, the Missouri Basin States Association Board of Directors recognized the need to acquaint some and reacquaint other basin leaders and decision makers with the original plan, what has been accomplished and what remains to be done. On August 10-11, 1983, the Association sponsored a conference on the Pick-Sloan Missouri Basin Plan in Des Moines, Iowa, that was attended by approximately 150 water leaders and decision makers from throughout the Missouri River basin. A profitable two days were spent in reviewing the aspirations of 40 years ago and noting water management problems that still remain to be solved in the Missouri River basin. Recent lawsuits regarding transfer of water out of the Missouri River basin also provided impetus for review of this important basin development plan.

Copies of the conference proceedings are being sent to state and university libraries in the Missouri River basin to make them more accessible to basin residents. The enclosed copy is for your library.

CMH/pr
Enclosure

CONFERENCE BACKGROUND MATERIALS

Conference Background and Purpose

Nearly forty years have passed since the Pick-Sloan Missouri Basin Plan was enacted into law by the United States Congress as part of the Flood Control Act of 1944. The Pick-Sloan Plan was the melding of separate plans authored by Colonel Lewis A. Pick of the U.S. Army Corps of Engineers and William Glenn Sloan of the Interior Department's Bureau of Reclamation for management of water resources in the Missouri River basin. The impetus for these basin plans came largely from the ravages of the drought of the 1930's and floods of the early 1940's.

William Glenn Sloan and Major General Lewis A. Pick

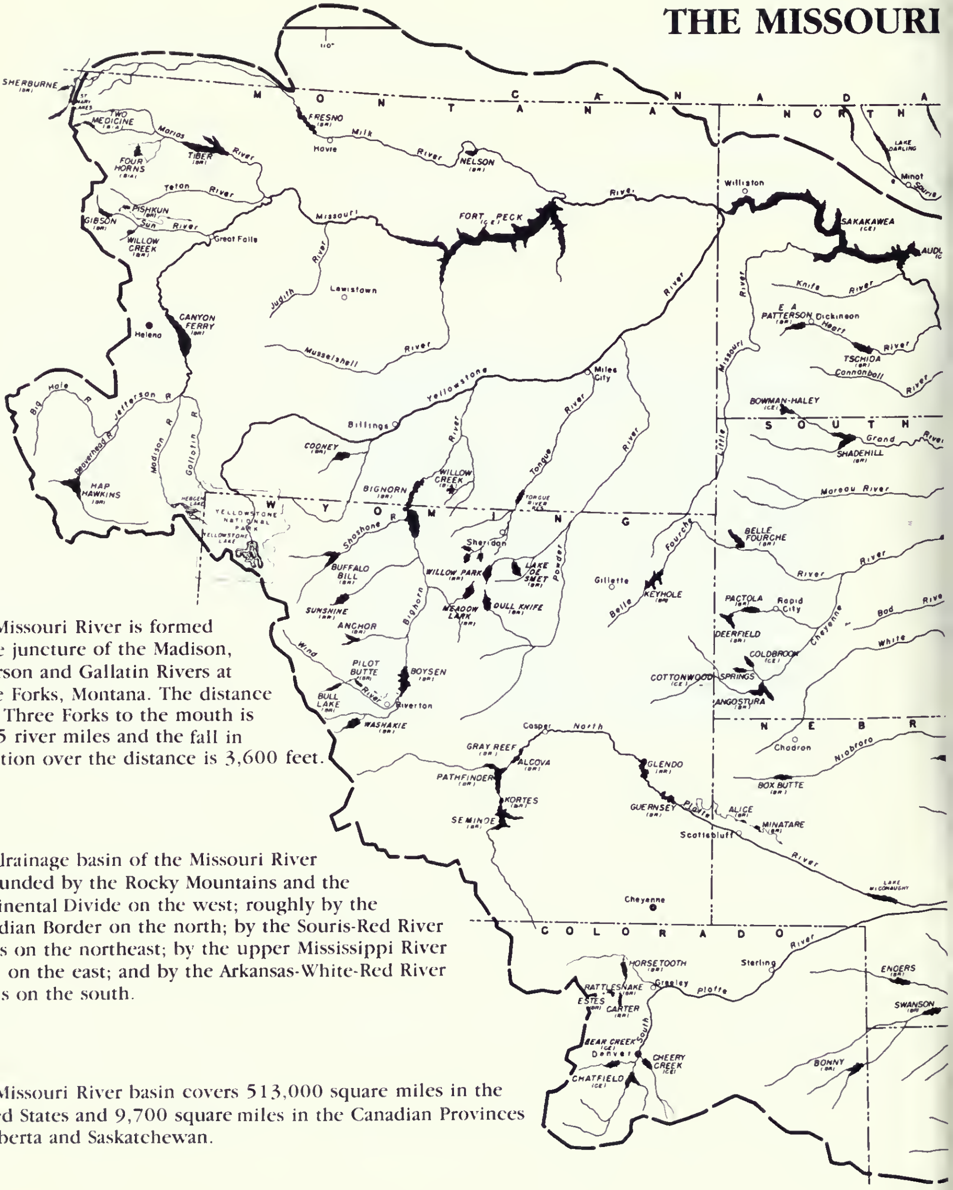
The Pick-Sloan Plan included over 100 dams and reservoirs on the Missouri River and its tributaries. These impoundments were to provide water for numerous irrigation projects, municipalities, industries and recreation. At the same time they were to provide flood protection, hydroelectric power and controlled water releases to sustain river navigation. Implementation of the Plan was spurred not only by the events leading to its development, but also by an expressed need to stimulate the national economy following World War II and prevent the return of economic depression.

An enormous human effort was involved in laying the foundation for the Pick-Sloan Plan before a shovel of dirt was turned. The President, state governors, members of Congress, government officials, public and private organizations and everyday citizens were involved directly and indirectly in developing solutions to the basin's water-related problems. Meetings took place openly and behind closed doors where promises and commitments were made leading to the Pick-Sloan Plan.

A generation and more of Americans have been born, educated and have assumed positions of responsibility in business and government since adoption of the Pick-Sloan Plan. Although many of the problems that precipitated the Plan have been resolved, many are still unsolved and plague basin residents today. In addition, new water-related problems and opportunities have come to the fore that were not specifically imagined by early basin residents. For these reasons, the Missouri Basin States Association believes it is timely and appropriate to review the Missouri Basin Pick-Sloan Plan. The purpose of the review is threefold: (1) to reacquaint basin residents and others with the background of the Missouri Basin Pick-Sloan Plan — why and how it came to be, (2) to review the details of the Plan — its component parts, and (3) to assess the current status of the Plan — what projects and programs have been completed and what remains undone.

It is the hope of the Missouri Basin States Association that through the Conference on the Pick-Sloan Missouri Basin Plan, basin residents will achieve a renewed understanding of the Plan — an understanding that will foster cooperation in the solution of current and future water-related problems in the Missouri River basin.

THE MISSOURI



- The Missouri River is formed at the juncture of the Madison, Jefferson and Gallatin Rivers at Three Forks, Montana. The distance from Three Forks to the mouth is 2,315 river miles and the fall in elevation over the distance is 3,600 feet.

- The drainage basin of the Missouri River is bounded by the Rocky Mountains and the Continental Divide on the west; roughly by the Canadian Border on the north; by the Souris-Red River basins on the northeast; by the upper Mississippi River basin on the east; and by the Arkansas-White-Red River basins on the south.

- The Missouri River basin covers 513,000 square miles in the United States and 9,700 square miles in the Canadian Provinces of Alberta and Saskatchewan.

- The Missouri River basin comprises one-sixth of the land area of the contiguous 48 states of the United States.

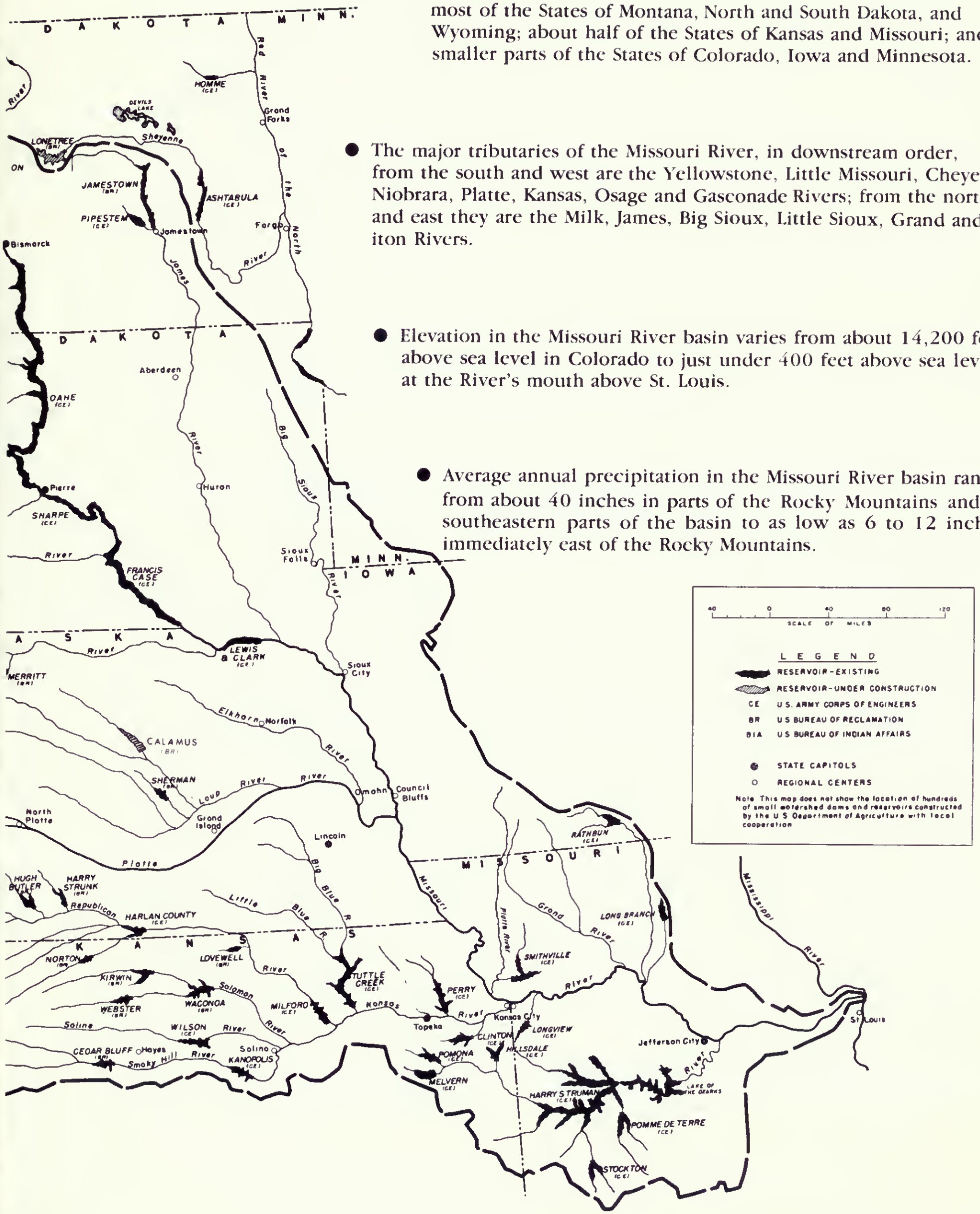
RIVER BASIN

- The Missouri River basin includes all of the State of Nebraska; most of the States of Montana, North and South Dakota, and Wyoming; about half of the States of Kansas and Missouri; and smaller parts of the States of Colorado, Iowa and Minnesota.

- The major tributaries of the Missouri River, in downstream order, from the south and west are the Yellowstone, Little Missouri, Cheyenne, Niobrara, Platte, Kansas, Osage and Gasconade Rivers; from the north and east they are the Milk, James, Big Sioux, Little Sioux, Grand and Chariton Rivers.

- Elevation in the Missouri River basin varies from about 14,200 feet above sea level in Colorado to just under 400 feet above sea level at the River's mouth above St. Louis.

- Average annual precipitation in the Missouri River basin ranges from about 40 inches in parts of the Rocky Mountains and southeastern parts of the basin to as low as 6 to 12 inches immediately east of the Rocky Mountains.



Selected Missouri River Basin Facts

- The name "Missouri" is of Indian origin, and there are several versions of its derivation and meaning. Early French maps showed an Indian tribe located along the banks of the Osage River called "Emissourites." Lewis and Clark interpreted this as meaning "Muddy River." A similar version is that Marquette and Joliet named the river Missouri after a Sioux Indian tribe camped along its banks. This tribe was first called the "Mizzou," later the "Missourites," and finally "Missouri." Still another possible derivation, an Indian word for all nations west of the Mississippi River, was "Misouris" or "We-mis-u-re" interpreted literally as people who use wooden canoes. This was similar to the Algonquin word "Canoe-haver" which was applied to a single tribe on the river. One imaginative version is associated with the word used by the Ojibwa or Chippewa Indians which meant "the great lizard that has its tail in the ice and snow and its mouth in the warm water." To early French explorers, this word sounded like "Missouri."
- Streamflow depletions from all sources in the Missouri River basin increased 89 percent from 1944 to 1978. In 1944 streamflow depletions totaled 9.08 million acre-feet and in 1978 were 17.19 million acre-feet.
- In 1978 irrigation accounted for 66 percent of all streamflow depletions in the Missouri River basin.
- Between 1944 and 1978 irrigated acreage in the Missouri River basin increased 175 percent, from 4,512,000 acres to 12,411,000 acres. The greatest part of this increase occurred on land irrigated from ground water, which grew from 294,000 acres in 1944 to 6,272,000 acres in 1978.
- The fastest growing non-agricultural category of water use in the Missouri River basin by percentage (1944-1978) was for energy processing, extracting and generation, +505 percent. The greatest increase in non-agricultural water use by volume over the same period was for municipal water systems, +307,800 acre-feet.
- In 1979 the installed generating capacity of hydroelectric facilities in the Missouri River basin was 4,195 megawatts.
- The Missouri River basin is estimated to have about 55 percent of the Nation's recoverable coal reserves.
- In 1978, the 473 counties in the Missouri River basin produced over 40 percent of the U.S. wheat crop, nearly one-fourth of its corn and hay, almost 46 percent of its grain sorghum, and about 16 percent of its soybeans. The value of all livestock sold represented over one-fifth of the Nation's total in 1978, and cattle sales exceeded one-third the national total that year.
- The 1978 population of the Missouri River basin was estimated at 9.8 million. Nearly 5.9 million, or 60 percent, resided in urban areas (cities of 2500 or more population).
- In 1978 water imported into the Missouri River basin from other river basins exceeded 500,000 acre-feet and water exported from the Missouri River basin was slightly over 30,000 acre-feet.
- In 1978 there were 28 reservoirs in the Missouri River basin with a normal storage capacity of 200,000 acre-feet or more, and 110 reservoirs with a capacity of 25,000 acre-feet or more.
- The net evaporation from 24 of the largest reservoirs in the Missouri River basin is estimated at 2.6 million acre-feet per year.
- In 1981 the Missouri River basin produced 145 million tons of coal, nearly 18 percent of all U.S. mined coal.
- In 1980 the Missouri River basin contained 5.1 percent of the U.S. population, but 16.8 percent of the Nation's rural farm population and 11.6 percent of its agricultural employment.

A Chronology of Selected Events in the Missouri River Basin

9000+ B.C.	First native inhabitation of the Missouri River basin estimated to have occurred. Distribution probably general throughout the basin, with known sites in Colorado, Wyoming, South Dakota, Nebraska, Missouri and Iowa.
1542	Spanish explorer Coronado, operating from Mexico, believed to have reached the southern edge of the Missouri River basin in central Kansas.
1650	The first irrigation in the Missouri River basin is thought to have been started by the Taos Indians along Ladder Creek in northern Scott County, Kansas.
1673	Mouth of the Missouri River discovered by Canadian explorers Father Jacques Marquette and Louis Joliet.
1680	French explorer LaSalle descends the Mississippi River to the Gulf of Mexico and claims the land drained by the river, including the Missouri River basin, for France. He names the area "La Louisianne."
1762	France cedes the Louisiana Territory to Spain following the Seven Years War.
1764	City of St. Louis, first outpost of the West, established below the mouth of the Missouri River by fur trader Pierre Laclede.
1800	Spain transfers the Louisiana Territory back to France by secret treaty.
1803	United States President Thomas Jefferson arranges purchase of the Louisiana Territory from France for $15 million. The Missouri River basin constitutes almost two-thirds of the Louisiana Purchase, the first territorial accession to the original thirteen colonies and the largest addition ever made to the Nation.
1804	President Jefferson obtains $2,500 from Congress to finance an exploration through the Missouri River basin to the Northwest. The task of leading the expedition is assigned to two captains in the U.S. Army Corps of Engineers, Meriweather Lewis and William Clark. They return to St. Louis in September 1806 after reaching the Pacific Coast and document their extensive discoveries in journals.
1806	Lt. Zebulon Pike departs St. Louis with orders to explore the sources of the Red and Osage Rivers and win the friendship of the Plains tribes. He journeys up the Missouri River and Osage River to a point near the Missouri-Kansas border. He then proceeds over land to the Republican River just above the Kansas-Nebraska border and then travels south out of the Missouri River basin. Pike labels much of the area he passes through as desert — thus originating the idea that the region is unfit for settlement.
1819	First recorded steamboat navigation on the Missouri River. Steamboat navigation on the river eventually reaches as far upstream as Fort Benton, Montana, and is estimated to have peaked in 1880.
1820	Major Stephen Long ascends the Platte River to central Colorado. Long perpetuates Pike's observations and terms the region "The Great American Desert."
1821	State of Missouri admitted to the Union. Other basin states follow in 1846 (Iowa), 1858 (Minnesota), 1861 (Kansas), 1867 (Nebraska), 1876 (Colorado), 1889 (North Dakota, South Dakota and Montana) and 1890 (Wyoming).
1824	Congress authorizes the U.S. Army Corps of Engineers to aid navigation on the Nation's waterways. "Snagging" work on the Missouri River begins in 1838. Missouri River known as the "graveyard of steamboats" with as many as 300 sunk in one year.
1844	The flood of 1844 is generally conceded to be the greatest known in the lower Missouri River basin. Although no records are available, the river in flood is estimated to have discharged 900,000 cubic feet per second at its mouth.
1848	In the two decades beginning in 1848, 150,000 persons are estimated to journey westward across the Missouri River basin to California and Oregon.

1853	Three federal surveys to locate a transcontinental railroad route pass through the Missouri River basin, adding greatly to knowledge of the area.
1854	The invention of the windmill helps insure the western farmer and rancher a water supply for his household, livestock and garden crops.
1862	The first 160-acre land grant under the Homestead Act is made to Daniel Freeman near Beatrice, Nebraska Territory.
1869	Completion of the first transcontinental railroad through the Missouri River basin fosters settlement in the region.
1874	The invention of barbed wire stimulates settlement on the plains of the Missouri River basin.
1877	Desert Lands Act of 1877 authorizes sale of public lands to persons who would irrigate them within three years.
1881	A crest of 18-1/2 feet above flood stage is recorded on the Missouri River at Yankton, South Dakota — highest known on the river.
1881	Some 300 delegates to a Missouri River Improvement Convention in St. Joseph, Missouri, call on the Federal Government to revive river commerce, declining because of rail competition.
1884	Congress creates the Missouri River Commission under the provisions of the Rivers and Harbors Act. The five-member body is composed of three Corps of Engineers representatives and two civilian representatives. The Commission is to: (1) superintend and direct river improvements authorized by Congress, and (2) consider and devise additional plans for improving the river for purposes of commerce and navigation. The Commission functions until 1902, when its duties are returned to the Corps of Engineers.
1902	Reclamation Act authorizes the Secretary of the Interior to build water diversion and impoundment facilities to provide irrigation water for public and private lands.
1904	Kincaid Act permits homesteading on 640 acres in western portions of the Missouri River basin.
1906	Secretary of the Interior authorized to develop hydroelectric generation at reclamation projects where needed for irrigation.
1910	International treaty between the United States and Great Britain apportions the water of the St. Mary and Milk Rivers, Missouri River tributaries, equally between the United States and Canada.
1912	Congress authorizes a permanent six-foot navigation channel on the Missouri River from Kansas City to the mouth.
1916	Congress passes first act asserting federal responsibility for flood control largely in response to major floods on the Mississippi River and its tributaries.
1925	The Rivers and Harbors Act of 1925 authorizes Corps of Engineers and the Federal Power Commission to consider needs for irrigation in planning for navigation, water power and flood control.
1926	First interstate compact allocating surface water in the Missouri River basin approved by the States of Colorado and Nebraska and ratified by Congress. The compact allocates the waters of the South Platte River.
1927	Congress authorizes the extension of the permanent six-foot navigation channel on the Missouri River from Kansas City to Sioux City, Iowa.
1927	Congress authorizes Corps of Engineers to undertake comprehensive river basin studies known as "308" reports. The reports are to recommend development for the purposes of navigation, flood control, hydroelectric power and irrigation.
1930's	The drought period of the 1930's in the Missouri River basin is of longer duration and more devastating than any previously recorded. During the entire period precipitation averaged 14 percent below normal basinwide and was 30 percent

	below normal for two years. In some localities, the precipitation deficit is even more severe.
1933	Congress authorizes construction of Fort Peck Dam and Reservoir in Montana under Public Works Administration. Fort Peck is the first of six major dams that will eventually be constructed on the main stem of the Missouri River.
1934	The National Planning Board and its successor, the National Resources Committee, begin to issue calls for comprehensive river basin planning as a solution to the Nation's water and related land resource problems.
1936	President Franklin D. Roosevelt creates the Great Plains Committee to recommend ways of relieving the effects of drought, depression and poor land use practices plaguing much of the Missouri River basin. The Committee is composed entirely of federal agencies and its report, published in 1940 by the National Resources Planning Board, recommends among other things, additional irrigation projects and future, detailed planning.
1936	Flood Control Act of 1936 authorizes levees and flood walls on the Missouri and Kansas Rivers in the Kansas Citys, and on the Missouri River in the Omaha-Council Bluffs area.
1936	H.R. 11958 introduced in Congress to create a Missouri Valley Authority.
1937	President Roosevelt proposes the division of the Nation into seven regions, drawn along river basin boundaries, for the purpose of multi-purpose river basin development. One region is to include the Missouri River and Red River of the North basins.
1938	First comprehensive ("308") plan for flood control and other purposes in the Missouri River basin adopted by Congress.
1938	Congress authorizes the installation of hydroelectric generating facilities at Fort Peck Dam and Reservoir on the Missouri River.
1938	Congress authorizes the Secretary of War to provide additional storage capacity at flood control dams for domestic water supplies.
1939	The Reclamation Project Act of 1939, Section 9, authorizes the Bureau of Reclamation to plan for the conservation, control and use of water resources in the Missouri River basin. The resulting plan, presented to Congress in 1943 as Senate Document 191, becomes popularly known as the "Sloan Plan" after its chief author William G. Sloan, then Assistant Director of the Bureau's office in Billings, Montana.
1939	The Reclamation Project Act of 1939 provides that the sale of hydroelectric power from federal projects must give preference to municipalities and public agencies and to cooperatives and other nonprofit organizations financed by Rural Electrification Loans.
1939	The Reclamation Project Act of 1939 authorizes the Secretary of the Interior to add municipal water supply to the multiple purposes of its projects.
1939	Board of Engineers for Rivers and Harbors recommends a nine-foot by 300-foot navigation channel on the Missouri River from Sioux City to the mouth.
1941	The National Resources Planning Board sponsors a conference in Omaha, Nebraska, to discuss the creation of a basinwide planning organization. The Missouri Valley Regional Planning Commission is created. It is composed of one delegate from each of eight basin states (omitting Colorado and Wyoming) appointed by their governors, and federal representatives from the Departments of Army, Agriculture and Interior. The Commission publishes a report in 1942 that calls for, among other things, an apportionment of the waters of Fort Peck and future reservoirs that might be constructed. The Commission apparently ceases operation when its chief advocate, the National Resources Planning Board, is terminated in 1943.
1941	Congress authorizes levee construction on the Missouri River from Sioux City, Iowa, to Kansas City, Missouri.

1942	The Missouri River States Committee organizes at a meeting in Billings, Montana, on July 29. The Committee eventually includes all ten basin states represented by the states' governors and their technical advisors. The aim of the Committee is to foster and expedite the planning, development and use of the water and allied resources of the Missouri River basin for the greatest common good of the basin and the Nation.
1943	The Flood Control Committee of the U.S. House of Representatives requests the Corps of Engineers to prepare a plan for "flood control and other purposes" for the Missouri River basin. The plan is submitted later in the year as House Document 475 and becomes known as the "Pick Plan" after then Missouri River Division Engineer Colonel Lewis A. Pick.
1944	The Missouri River States Committee submits a resolution to Congress through President Roosevelt in August. The resolution calls for: (1) a single comprehensive plan for Missouri River basin development, (2) the Corps of Engineers and Bureau of Reclamation to coordinate and merge their basin plans (Pick and Sloan Plans), (3) legislation to implement the basinwide development plan, and (4) the beneficial consumptive use of basin water arising in states wholly or partially west of the 98th meridian to have precedence over water for navigation. President Roosevelt endorses the resolution in his transmittal to Congress and adds his recommendation that a Missouri Valley Authority be created to administer basin development.
1944	S. 2089 introduced in Congress to create a Missouri Valley Authority.
1944	The Corps of Engineers and Bureau of Reclamation meet in Omaha, Nebraska, on October 16-17 and effect a merger of their separate basin development plans. The combined plan is submitted to Congress as Senate Document 247 and becomes known as the Pick-Sloan Missouri Basin Plan.
1944	The Pick-Sloan Plan is enacted into law on December 22 as part of the Flood Control Act of 1944. The Plan, with some later adjustments, provides for the construction of 316 separate project units, with 112 dams having a total storage of 107 million acre-feet of water, 4.3 million acres of irrigation, 2.6 million kilowatts of hydroelectric generating capacity, a 9-foot navigation channel from Sioux City to the mouth, and hundreds of miles of levees and other flood protection structures.
1944	The Flood Control Act of 1944 authorizes the Corps of Engineers to construct, operate and maintain (or permit others to do so) public park and recreation facilities at reservoir areas and identifies recreation as one of several purposes for Missouri River main stem reservoirs. The authorization was extended to all basin reservoirs in 1962.
1945	The Missouri Basin Inter-Agency Committee is created on March 29 by action of the Federal Inter-Agency River Basin Committee. The Committee is composed of state and federal agency members and its broad duty is to effect coordination among parties engaged in basin water and land resource planning and development. High on its list of activities is coordination of Pick-Sloan implementation.
1946	Construction begins on Garrison Dam in North Dakota and Ft. Randall Dam in South Dakota.
1946	The 1946 Fish and Wildlife Coordination Act provides for consultations to prevent loss or damage to fish and wildlife at any federal or non-federal agency project operating under federal permit when the project is authorized to impound, divert or control waters. The Act is amended in 1958 to give fish and wildlife conservation planning equal consideration to other project purposes.
1948	Construction begins on Oahe Dam in South Dakota.
1951	After a wet May and June, unusual precipitation in July over the Kansas River basin produces a discharge of the Kansas River into the Missouri River of 510,000 cubic feet per second. The Missouri River discharges 636,000 cfs at its mouth.
1952	Construction begins on Gavins Point Dam on the South Dakota-Nebraska border.

1952	President Harry S. Truman appoints the Missouri Basin Survey Commission to study basin needs. The Commission recommends creation of a permanent Missouri River Basin Commission in its report of 1953.
1952	Heavy snowmelt in the upper basin contributes to severe flooding on the Missouri River in April. A flood discharge of 500,000 cubic feet per second is recorded at Bismarck, North Dakota (Garrison Dam above Bismarck is closed one year later).
1954	Flood Control Act of 1954 authorizes reservoirs and local protection projects on Osage and Kansas Rivers and tributaries to be included in the Pick-Sloan Plan.
1958	The Water Supply Act of 1958 permits the incorporation of storage space in Corps of Engineers and Bureau of Reclamation reservoirs for future domestic, municipal and industrial water needs.
1959	Construction begins on Big Bend Dam in South Dakota.
1959	U.S. Senate Select Committee on National Water Resources recommends comprehensive studies of water and related land resources be undertaken for all river basins in the Nation. Recommendations are eventually translated into legislation in the Water Resources Planning Act of 1965.
1964	Missouri Basin Inter-Agency Committee creates Standing Committee on Comprehensive Basin Planning. Committee is charged to produce a "framework study" to ". . . provide guidance for future multi-purpose development of the (basin's) water and related land resources for their optimum or best use." The framework study is published in seven volumes in 1971.
1965	Congress passes the Water Resources Planning Act of 1965. The Act permits the creation of river basin commissions at the request of basin state governments, authorizes funding to partially support the work of river basin commissions and state water planning agencies, and creates the U.S. Water Resources Council to provide a national perspective to water resource planning.
1972	The Missouri River Basin Commission is created by Presidential Executive Order No. 11658 on March 22. The Commission's first meeting on June 14 is shared with the 169th and final meeting of the Missouri Basin Inter-Agency Committee. The Commission is charged under law with, among other things, maintaining a comprehensive plan for basin development and being the principal coordinator of federal, state, interstate, local and nongovernmental plans for water and related land resource development in the basin.
1977	The Missouri River Basin Commission adopts its first comprehensive water management plan for the Missouri River basin.
1978	The Missouri River between Gavins Point Dam and Ponca State Park, Nebraska, is authorized as a National Recreational River under the National Parks and Recreation Act of 1978.
1980	The Missouri River Basin Commission adopts its second comprehensive water management plan for the Missouri River basin.
1981	The Missouri River Basin Commission and five other river basin commissions are abolished by Presidential Executive Order No. 12319 on September 30.
1981	The governors of the ten Missouri River basin states resolve to form the Missouri Basin States Association to continue some activities of the Missouri River Basin Commission. The Association is incorporated as a non-profit organization on September 18 to ". . . conduct, encourage and participate in activities which promote interstate coordination of water resources management in the Missouri River basin."
1983	The Missouri Basin States Association completes a Flood Plain Management Study of the lower Missouri River flood plain and a Missouri River Basin Hydrology Study, both begun by the Missouri River Basin Commission. The Association also sponsors a Missouri River Basin State Water Planning Seminar and a Pick-Sloan Missouri Basin Plan Conference.

CONFERENCE OPENING

Mr. William W. "Bill" Crews, *MBSA President and Iowa Governor's Missouri River Coordinator*

Good afternoon, I'm Bill Crews, President of the Missouri Basin States Association. On behalf of the Board of Directors, I welcome you to this Pick-Sloan Missouri Basin Plan Conference. I'm also able to welcome you to Iowa and to Des Moines as this is my home. I'm very honored and appreciate having the Governor of the great State of Iowa here to give us some opening remarks and welcome.

Governor Branstad was elected just last year as the youngest elected governor currently in the Nation. Governor Branstad has a long, illustrious career of public service, beginning in college with political involvement and in the Armed Services. While still in law school, he was elected to the State Legislature from his home area of North Central Iowa, serving from 1972 through 1979 when he took office as Lieutenant Governor of the State of Iowa. He served four years as Lieutenant Governor. Then as I mentioned, he was elected Governor last year, taking over this year. I might add a personal note that I think he enjoys a range of popularity in his term of office that is probably unequalled for Iowans and we're very happy to have him as Governor. I'm very happy to be able to present him to you.

Governor Branstad.

(Governor Branstad's welcoming remarks follow the Conference Opening.)

Thank you Governor Branstad — and thank you for your generous welcome, Governor.

At this time, before we get into the main reason for this conference, I want to relay to some of you who may not be familiar with our Association, its background, its gestation and birth as we were discussing this morning.

On September 30, 1981, the Missouri River Basin Commission was terminated by Presidential Executive Order. The Commission, a joint federal/state entity, had been the principal agency for coordinating water management activities in the Missouri River basin since its creation in 1972. Prior to the Commission's demise, the governors of the ten Missouri basin states agreed to continue regional cooperation on water resource management activities and to complete two unfinished Commission studies.

The Missouri Basin States Association, a non-profit organization, was therefore created to pursue four major objectives. (1) The Missouri River Basin Hydrology Study, begun by the Commission, is completed. (2) The Middle and Lower Missouri Flood Plain Management Study, begun by the Commission, has also been completed. (3) Coordination and information exchange between public and private water management interests in the basin is being continued. (4) Processes for identifying, analyzing and making recommendations on interstate water resource problems and issues in the basin have been developed. The Missouri Basin States Association is governed by a 20-member Board of Directors, two from each basin state. The Board of Directors elects officers and creates standing and special committees, develops Association work programs and budgets, hires staff and generally provides the direction for the Association.

It is the fourth objective that caused the Missouri Basin States Association to decide to hold this conference. A lot of us who are involved in water resource management in the basin were not around in 1944 and before when the Pick-Sloan Plan was being developed. I think it became apparent to the Board of Directors that this type of conference where we can look at why it happened, how it happened, and what's left to happen, can give everybody a better understanding of the Pick-Sloan Plan and the needs of the basin. The MBSA

WILLIAM W. CREWS
IOWA GOVERNOR'S MISSOURI RIVER COORDINATOR

Mr. Crews has been in his present position since 1981. He is currently President of the Missouri Basin States Association and also Chairman of the Upper Mississippi River Basin Association. After receiving a law degree from the University of Iowa in 1977, he practiced law and participated in preparation of the Upper Mississippi River Master Plan Studies.

is very pleased to sponsor this conference, and we hope that you will have an enjoyable time and a very informative time. Again, as Governor Branstad mentioned, we are glad to have you in Iowa.

We are also very grateful for your attendance because it's great to have you in Des Moines. This is Iowa's idea of an interbasin transfer. We've transferred probably the finest collection of Missouri River managers ever assembled, and we're grateful for your attendance. You know, there are probably only two things that could happen as a result of this interbasin transfer. First, the River will probably let loose a terrific sigh of relief, and second, we here today and tomorrow can become much more informed, much more understanding of the circumstances and events which have shaped so much of this great river basin and have given the promise of a better life for all of the residents of the basin.

At this time, I would like introduce Vern Fahy, our panel leader for this afternoon. He will, in turn, introduce the members of the panel.

WELCOME

The Honorable Terry E. Branstad, *Governor, State of Iowa*

The first time they stood up for me like that I thought everyone was going to leave. I'm very glad to welcome you to Iowa, to Des Moines our capitol city, and to this fine new Marriott Hotel. It is kind of disappointing that when we have a conference like this they would put you in the Davenport-Dubuque Room. It seems to me that we ought to have had the Sioux City or Council Bluffs Room for this meeting rather than the other side of the state. Nevertheless, we are very pleased with this facility and we're very proud to have this important Missouri Basin States Association hold its conference here in Des Moines, Iowa.

We're very proud of Bill Crews, who is our Missouri River Basin Coordinator for the State of Iowa, and the fact that you have chosen him to serve as your President is something that we're very pleased with. We also appreciate the fact, Bill, that you convinced the Association to hold its meeting here in Des Moines. Not only do we think Des Moines is a surprising city, but we're in a situation now where we're trying to keep the state budget in balance and we hope that you folks will do some shopping and spend some money and help increase our sales tax receipts while you're here.

We understand how important the Missouri River is to the State of Iowa, and I don't think we can underestimate the importance of the River to the entire basin. The residents of the Missouri River basin look to the River for many reasons. They look to the River as a source of water supply for personal, industrial and agricultural needs. We look to the River for recreational resources, for fish and wildlife, and for habitat for those species. We look to it for commercial navigation, and we look to it as a source of energy, electrical generation. We see its important historic and cultural significance to our region. It is important that the decision makers that are aware of river resources make those decisions intelligently. We need a thorough understanding of the River and its needs, and the needs of the residents of the River basin, in order to insure that we will have the availability of this great resource, not just during our lifetime, but for future generations.

We are pleased with this Association, and that you are holding your conference here, and that you will be looking at the future of the Missouri River basin. This conference will help the basin states renew their understanding of the Pick-Sloan Plan for the development of this basin. I am told that you will be examining changes that have occurred over the past 40 years and the impact that those changes have had on the Plan. Certainly there are many that have occurred. We have an appreciation and an understanding for the environment. This is something that has become a greater concern to many Americans in the last couple of decades. We have increased productivity from our agricultural lands; and as a result, today we are faced with a substantial surplus and we are trying to deal with the problem of overproduction and surplus in our farm economy.

We have new technologies that were not even contemplated 40 years ago. Those new technologies present new challenges, new demands, and new opportunities for the river system itself. We have new energy developments and needs. Also, these developments present challenges for wise water use in this basin. As stewards of this precious resource, we must learn from the mistakes of the past and we must prepare ourselves for the challenges of the future. It is time that we took a long, hard look at the Missouri River basin and the direction that we're heading. This conference can be a good beginning to look at that and plan for the future. Hopefully, the Missouri Basin States Association will continue the progress begun

HONORABLE TERRY E. BRANSTAD
GOVERNOR, STATE OF IOWA

Elected Governor in 1982 after being Lieutenant Governor since 1979, he also served as a State Representative from 1973 until 1979. Prior to becoming Governor, Mr. Branstad practiced law in Lake Mills, Iowa, in addition to his duties as an elected official. He is also involved in the operation of the family farm and is a member of numerous farm and civic organizations. He received a Bachelors degree from the University of Iowa in 1969 and graduated from Drake University Law School in 1974.

with this conference, and we'll work together for the common good and for the good of all of us that depend upon the Missouri River and this basin. Iowa, as one of the ten Missouri River basin states, shares a common concern that I'm sure all of you have for the wise, efficient and environmentally correct use of this very important natural resource. Through the wise use of this river resource, we can preserve it for future generations yet unborn.

We hope that you have a very successful conference here today and tomorrow, and we hope that you not only are able to work together and learn from each other, but that you will also have an opportunity to see the sights of this city and see what's going on. I think you chose a good time to have the conference. Today is the opening day of the Iowa State Fair. I'm going to be leaving here and going to the fair, and we have a whole series of activities there this afternoon. This evening the State Fair parade will be coming through downtown Des Moines, starting about 6 o'clock. We certainly invite you to watch that parade. We invite you to come out and see the fair during your visit, as well as seeing some of the other interesting things in Des Moines. We have a skywalk system. We've got a lot of new buildings that have gone up — and we hope you enjoy your accommodations, that you have a successful conference, and we again appreciate the fact that you chose to have it here in Des Moines and we wish you all the very best. Thank you very much.

GESTATION AND BIRTH OF THE PICK-SLOAN MISSOURI BASIN PLAN

Moderator: Mr. Vernon Fahy, *North Dakota State Engineer and Chief Engineer of the North Dakota State Water Commission.*

Ladies and Gentlemen, it's my pleasure to lead a distinguished group of speakers and authors, and movers and shakers, through a discussion this afternoon. We will have a couple of formal presentations. We'll then have a break and come back, add two members and assemble as a panel for discussion. And then if some of you have questions or want to elaborate on any of the points made by the speakers or the panel members, the meeting will be open for input from the audience. We want this to be not only an information presentation but also an exchange. So we will appreciate your participation.

You might wonder what brought about the conference here today — and I guess I'm going to mention it now because it's certainly going to be mentioned before the conference is over, and that's the words "ETSI." We have been, as the Missouri Basin States Association, directed toward making recommendations for the solutions of conflict within the basin. We were well on the road to charting that course when the ETSI water permit stimulated or galvanized everyone into a discussion, ultimately litigation, and certainly caused a tremendous increase in media interest.

About that same time, General Sisinyak made a presentation to the Missouri Basin States Association in which he said, "Look fellows, I've got a job to do in this basin. I have a federal mandate, and I need to carry on certain functions. I'd like to have a group with whom I can correspond that can be a sounding board for me and that can support some of the actions that I might be taking in the future in the basin." After we received General Sisinyak's paper, and founded upon the discussions that were stimulated by the ETSI water permit, then Association President Christopulos appointed a subcommittee composed of representatives from Iowa, Nebraska and the two Dakotas to see what we could do about speeding up the process of issue identification and working toward recommendations.

This group spent a good deal of time examining how best to go about speeding up this process; and we hit upon two major points that would be responsive, not only to the Corps of Engineers and the other federal agencies who have a mandate within the basin, but also would ultimately impact upon the kinds of issues that were raised by the ETSI water permit. The first item that we decided upon was a state water resources planning seminar because it became apparent almost immediately that as discussion took place about the impacts of allocations of waters in the basin, there was a lot of talk being made out of fear and not out of knowledge. There were a good many statements made relative to the water needs of various states and yet, in some of our states, we didn't know what our needs were nor did we know what our present uses were. So the idea occurred that we ought to get the states together, take a look at our planning processes, examine how the various states are doing things and benefit from that kind of exchange, then attempt to move forward in the planning arena. This was done. We met in Denver at a highly successful meeting, and I think we all learned a great deal.

The second item was, since so much of the discussion in the basin related to issues associated with the Pick-Sloan Plan, that we inform ourselves more fully about what that plan was, what its promises and potentials were, where it stands today and where it can go in the future. So that was the genesis of this particular conference. Carroll Hamon, from the staff, deserves a great deal of credit for working diligently to

VERNON FAHY
NORTH DAKOTA STATE ENGINEER
AND CHIEF ENGINEER OF THE NORTH DAKOTA
STATE WATER COMMISSION.

Mr. Fahy has served in his present position since May 1973. He ended 24 years of municipal service in engineering, public works, planning and as City Manager for Minot, North Dakota, when assuming his current position.

Mr. Fahy was Vice-Chairman of the Missouri River Basin Commission in 1979, President of the National Water Resources Association in 1979 and 1980, and is currently the U.S. representative to the Souris River International Board of Control. He is one of the charter members of the Board of Directors of the Missouri Basin States Association.

put it together and to search out people who could contribute to this conference. I hasten to add at this point that there is no bias associated with this conference in terms of navigation, irrigation, or anything else. This is an information conference. The context, the format, was agreed upon by representatives of both the lower and upper basin states. So the idea was to attempt to put forth an objective conference, and it's not to sit here and listen to posturing by any of us representing states, but actually for us to come here and learn and from that learning process, perhaps improve our understanding of each other's problem. Now I'll move into the panel — that's what you came here for.

(Mr. Fahy introduced Mr. Harley and Mr. Weinberg who made formal presentations, then Mr. Karabatsos and Mr. Hipple, who made informal remarks before the four were assembled as a panel for audience interaction.)

The Gestation Period of the Pick-Sloan Missouri Basin Plan

Mr. Paul L. Harley, *Former Missouri Basin Planning Officer*
U.S. Department of the Interior.

Having responded affirmatively to your invitation to speak on the "Gestation Period," Pick-Sloan Missouri River Basin Plan, I consulted my dictionary. Gestation could mean "development of a plan in the mind - or a conception." Looking further, I found for conception, "the beginning of some process or chain of events." Today and tomorrow we will explore many elements in that chain of events which led to the Pick-Sloan Plan and its offspring.

Certainly, in retrospect, we know that the Missouri basin and its people have had a colorful history packed with birth pains, but also delivery of water, land and human-value developments. Time available will not permit me to trace this history, but you can benefit by such review when you return home. For anyone working or interested in the natural resources field who hasn't done so, you owe it to yourself and associates to review and ponder these seven volumes (slide - MRBCFS)* designated "Missouri River Basin Comprehensive Framework Study." Collectively they will give you a fine perspective for where we had been and how far we had come by the 1970's, besides a then-assessment of the residual problems, needs and possible courses of future actions in utilizing the available resources to better this region and the nation.

Beginning with the aboriginal influx, all occupants of the basin became aware of its great diversity in topography with elevations of less than 500 feet to 14,000 feet (slide), geology, land, climate, precipitation with averages from about 6 to over 40 inches (slide), and runoff from negligible amounts to about 12 inches (slide). Coming from humid and subhumid climates, it took time for the early explorers, trappers, miners, plains farmers and other settlers to understand and gradually to cope with its general characteristics and extremes of natural conditions and importantly, the degree to which they could adjust to these occurrences to better satisfy the needs of all who were dependent on the basin - locally and nationally.

Even one so learned as Daniel Webster once classified this region as the Great American Desert. One measure of its early assumed worth is evident when, in responding to America's negotiations with the French Government for purchase of New Orleans, Napoleon offered to sell (slide - Louisiana Purchase) the entire Louisiana Territory for $15 million, or 2-1/2 cents an acre, in 1803. The greater part of this area now comprises the Missouri basin (slide Missouri basin and the United States). Our purchase doubled the size of the nation, added immeasurably to its wealth and made it inevitable that Americans would advance to the Pacific. For us, the systematic exploration and settlement of this vast area began with the Louisiana Purchase.

Through determination and resourcefulness, people of the basin met head-on the enumerable problems of development. However, more and more, they recognized the need for concerted local and state actions and demanded federal assistance.

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*This presentation included photographic slides which are not reproduced here

Until after the Civil War, congressional treatment for the Missouri basin and the arid West was much the same as accorded the more humid areas of the Middle West and the South. Emphasis was on communications, Indian pacification and settlement. With the close of the Civil War in 1865 and a renewed surge of people westward, it became apparent that the total resources of the West would need closer congressional attention if the new citizens of this area were to enjoy the same opportunities as did their forbearers in the East.

In quickly summarizing some of the actions to 1930, they included innovative river and land transportation, mining and evolution of water right systems, irrigated agriculture, initial discovery and tapping of groundwaters by windmills, grassland harvests of feed for livestock and sod for homes, land subdivision by wooden rail and barbed wire fences, revolutionary developments in machinery, homestead laws, crop adaptation efforts, and damage by floods, wind, droughts, prairie fires and a host of interacting phenomena.

Certainly, this period was a trying one for all residents of the basin as they struggled through the shadowed unknowns for self survival and endeavoring to meet many needs of the nation. In terms of their conception of the new and more abundant life in prospect, fitting words were penned by T. S. Eliot who wrote:

Between the idea
And the reality . . .
Between the conception
And the creation . . .
Falls the shadow.

Certainly there were to be many shadows and in the 1930's we find the basin, and in many respects the nation, encountering the combined forces of drought, crop and livestock failures and general economic depression. Triggered by the stock market crash of 1929, the Great Depression saw hundreds of banks becoming insolvent and farmers and businessmen losing their operating capital and reserves as well. This, added to the concurrent drought, almost basinwide, created economic chaos.

A few illustrations from personal experience will bring home some of the hardships of that period termed the "dirty thirties." I well remember the dust storms (slide) in Kansas when my father experienced mud balls beneath his eyes day after day as he fought to see and to work, the sand blasting and filter clogging dust as it ruined the paint and working parts of autos and machinery (slide), buried fence lines and smaller buildings (slide), starving cattle (slide), and grasshoppers eating the salt and oil-stained handles of shovels together with fence posts and the bark from trees. Precipitation averaged 14 percent below normal during the drought, and in two years it fell 30 percent below normal (slide - crop failure). Some localities showed even more severe deficits. In 1932 in Boulder, Colorado, while attending college there, I saw the homes and other buildings plastered with red-dust stained rain from heaven only knew where. My brothers at home worked in a canning factory processing meat from half-starved cattle sold by the farmers and ranchers from the range country. This canned meat subsequently was funneled back to the needy as government aid. Those were the days, my friends.

By contrast, many parts of the basin had suffered highly destructive floods and the 1930's and '40's added significantly to their history. Especially destructive was that in the Republican River basin in 1935 that devastated its valley, damaged 25 cities and towns and took 110 lives. Occurring in the spring and summer, the 1943 flood on the Missouri River (slide - Missouri River at Omaha airport) covered 1.8 million acres of agricultural land, causing more than $35 million in estimated damages (slide - Missouri River near Nebraska City) and destroying some federal flood control levees later replaced at a cost of $1.8 million. Omaha and Council Bluffs suffered severe damages and there were pleas for comprehensive flood protection there and elsewhere over the entire basin.

Under the able leadership of President Roosevelt and others, the Federal Government did respond in many, many ways to the manifold pleas for assistance. These emergency actions included the "bank holiday" and an assured banking system, emergency public works and range conservation programs, agricultural research, farm credit institutions, water and land resource development, rural electric cooperatives, and many other innovative and progressive reforms. Unemployment was rampant nationwide. As shown in red on this slide (Unemployment/Federal Works Pro-

PAUL L. HARLEY

In 42 years of government service ending in 1978, Mr. Harley served in several water resources planning-related positions with the State of Colorado, National Resources Committee, National Resources Planning Board, and the Department of the Interior. The last 37 years of his career were spent with the Bureau of Reclamation as Area Engineer for the Lower Platte River basin in Nebraska and Project Manager of the Niobrara-Lower Platte River Basin Project Office, and as the Interior Department's Missouri River Basin Planning Officer. In the latter position, Mr. Harley served for 11 years coordinating the Department of Interior's comprehensive and long range planning with the 10 Missouri River basin states and with other federal agencies. Since his retirement, Mr. Harley has performed consulting assignments for a number of clients, including the former Missouri River Basin Commission. He holds a Civil Engineering degree from the University of Colorado.

gram), we had over 12.2 million people so affected in 1932 and this had declined only to 8.2 million by 1940. Federal public works employment, shown in blue, approached 2 million persons by 1939-40. Expenditures for construction of federal public works reached $510 million in 1937 and $658 million in 1940. Significant to our story today, 38 percent of such expenditures in 1940 was for water use and control, and 14 percent for transportation (including rivers and harbors) - 52 percent in all. National income dropped from a high of $85 billion in 1929 to but 43 percent of that amount in 1932, and as you can see by this slide (National Income by Quarters), it recovered slowly and not fully by 1940.

Despite these adversities, 1932-1940 was a period of gestation and conception of plans to better cope with the forces of extremes in this region and the nation. Much more has and could be said about these and many other programs, both state and federal. *But,* let us concentrate now on a few illustrations of major developments that served to bring those of this basin to the place where we came together as a family and conceived for the future of our region.

Even before the 1930's congressional enactments affecting the basin and the West began increasingly to recognize that creation of wealth nationally and citizen opportunity depended largely on the utilization of water resources. In 1936 I entered upon the field as a young graduate engineer and so participated at first as a fledgling. Even so, I am mindful of what took place and can speak out of personal experiences and acquaintanceships in the selective illustrations that follow.

Prior to that time, the Congress and the federal agencies had proceeded more on the basis of authorizing and implementing individual projects or programs for flood control, irrigation, power and other resource developments. However, broader concepts and actions in this respect began to manifest themselves. One illustration is in the congressional/Presidential approval of the Boulder Canyon Project Act in 1928, generally regarded as the first for a large multi-purpose project. In Section 1 it stated the project purposes as controlling floods, improving navigation and regulating the flow of the Colorado River, providing for storage and delivery of stored waters for reclamation of public lands and other beneficial uses, and the generation of electrical energy at the dam as a means of making the project a self-supporting and financially solvent undertaking. The Secretary of the Interior, subject to the terms of the Colorado River Compact, was authorized to construct, operate, and maintain a dam and incidental works — to create a storage reservoir of not less than 20 million acre-feet of water, and a main canal and appurtenant structures — connecting the Laguna or other suitable diversion dam with the Imperial and Coachella Valleys in California. Also, provision was made for increased capacity in the canal to carry water for the beneficial use of San Diego, California.

Besides the expanded concepts of multi-purpose developments here exemplified, the Act authorized that project revenues were to be placed in a Colorado River Dam fund from which the project construction costs were to be liquidated. While new, with time needed to prove the imminent practicability of these innovative concepts, the tremendous potential of integrated resource development had been recognized and accepted.

Illustrative also of the broadening concepts and scope of water resource policy are two actions of the Congress in the 1920's. Under Section 15 of the Boulder Canyon Project Act, just mentioned, the Secretary of the Interior was authorized and directed to make investigation and public reports on the feasibility of projects for irrigation, generation of electric power and other purposes in the six states in which that basin is located. The results were to be made available to the states and the Congress, and the Department was to formulate a comprehensive plan for control, improvement and utilization of the waters of the Colorado River and tributaries. Earlier, in March 1925, the Congress requested in Section 3 of the River and Harbor Act of that year that the Secretary of War, through the Corps of Engineers of the United States Army, and the Federal Power Commission prepare and submit an estimate of cost for a program of comprehensive investigations — this we know as the "308" studies. The cost estimates were for examinations, surveys or other investigations required of those navigable streams and tributaries where power development appeared feasible and practicable, with the view of formulation of general plans for the most effective improvement for purposes of navigation in combination with the most efficient development of the potential water power, the control of floods and the needs of irrigation. Only the Colorado River basin was excluded.

In reporting back in April 1926, the two agencies included, among many other potentials, the Missouri River and 20 tributaries draining much of the basin from its northern to southern portions. In Section 8 of their report it was stated: "Investigations of the type for which estimates are submitted should . . . be first given to streams on which it appears there is a possibility of the Federal Government's undertaking, either alone or in connection with private interests, construction work for . . . improvement of the stream. These surveys should evidently be made by the agencies which are to be entrusted with the construction work; in the case of navigation and flood control the War Department, and in the case of irrigation projects the Department of the Interior . . . ."

Such investigations in the Colorado River basin provided valuable data used by the states, the Congress and others leading to that section of the international treaty with Mexico allocating waters of the Colorado River in 1944 and the Upper Colorado River Compact and its water suballocations in 1948. Those in the Missouri basin were forerunners of other investigations of broader scope undertaken in the 1930's and early 1940's by the Bureau of Reclamation and the Corps of Engineers that we will hear about tomorrow.

Among the many alphabetical agencies that came into being with the New Deal in the early 1930's were the National Water Resources Committee and successor National Resources Planning Board (slide - Field Offices NRPB). As you will note, two of its field offices in Denver and Omaha were concerned with the Missouri Basin States. In August 1937 President Roosevelt asked the National Resources Committee to proceed with revision of a report on "Drainage Basin Problems and Programs" transmitted to him in December 1936. The committee comprised representatives of the Departments of War, Interior and Agriculture; the Public Health Service; the Federal Power Commission; and several prominent consulting engineers. To obtain firsthand views about future development of water resources, the committee appointed 45 drainage basin committees. Each of these comprised field representatives of federal agencies concerned with water development and conservation programs in the basin together with an equal number of state agencies and local organizations having knowledge of or an interest in such programs. These state/local appointments were made by the respective governors of the states. In each basin a consulting engineer from another basin and of high competence and long experience was appointed to work with and assist the committee.

Under this procedure, instead of receiving reports and recommendations from only the regular federal departments dealing with land and water developments, local groups and interests were brought into the picture. The committee structure and open meetings held at varied locations over each basin provided a framework within which the resource problems could be thoroughly considered around the table. When special problems arose, invitations were issued to representatives of such interests to meet with the committee and present their views.

Reminiscent of our own more recent Missouri Basin Inter-Agency Committee and Missouri River Basin Commission experiences, each of the drainage basin committees was charged with responsibility to carefully review and consider conditions, problems and needs in these fields; further, to prepare reports and recommendations about these problems and needs to the Water Resources Committee.

Such a committee operated, not to do the work of the agencies, but as an advisory body to bring about broader and better development in the basin, giving all an opportunity to present their views; in short, to gradually evolve a unified plan in which individual interests were merged into a balanced program for the whole area. Along with this activity, the states were encouraged and received assistance in preparing their state water plans.

Some of the basins showed extraordinary problems and a need for early, concerted action in finding solutions. One such was the Rio Grande basin in Colorado, New Mexico and Texas. The three states had encountered critical problems in the development and utilization of water supplies, including at one time a suit in the Supreme Court of the United States for adjudication of differences between water users in New Mexico and Texas. Further, several of the projects involved federal financing and repayment arrangements.

Culminating historical problems of interstate uses of Rio Grande waters, the respective governors of the three states and the President of the United States in the early 1920's designated commissioners to negotiate an interstate water compact. A compact was drawn and duly ratified by the legislatures and the Congress in 1929, but only as a temporary measure with an expiration date in 1935. Near that time the compact commission met to conclude, if possible, a permanent compact. Many proposals were made but no agreement was reached, primarily because further basic data on the supply and uses of water was needed. Under these circumstances the temporary compact was extended to 1937.

In earlier years there was much activity in promoting Rio Grande water utilization projects for which federal funds were sought. In 1935 President Franklin D. Roosevelt wrote the federal agencies concerned with proj-

ects or allotments for water use in the Upper Rio Grande Valley. He instructed them not to approve any such projects without securing from the National Water Resources Committee a prompt opinion thereon from all relevant points of view. This he based on recommendations made to him by the National Resources Committee Board of Review. Following up, the Board of Review proposed a conference with the Rio Grande Compact Commission which in turn requested the National Resources Committee to undertake, with Commission collaboration, an investigation to assist in reaching an equitable apportionment of Rio Grande waters above Fort Quitman, Texas.

Pursuant to this request, federal funds were allotted for the Upper Rio Grande Joint Investigation. Operating under a consulting board (slide Organization Chart) and the NRC field coordinating office, the investigation proceeded with the involved federal agencies working with the states and Rio Grande Compact Commission. In general, the essential facts sought were those relating to the available water supply; water use and requirements; and possibilities of additional water supplies by storage, importation and salvage of then losses and wastes. The investigation and report were completed in less than two years. It is significant that with the earlier negotiations and results of the investigation, the final compact was signed by the states in March 1938, only three months after transmittal of the joint investigation report to all concerned.

In its transmittal to the Water Resources Committee, the Upper Rio Grande Consulting Board called attention to the unique approach to the underlying problem of a grave water controversy on an interstate river. For the first time the involved states joined with the Federal Government in an endeavor to find a satisfactory basis for the water allocation. The cordial willingness of the states' representatives who entered into the undertaking exemplified constructive statesmanship. Further, the precedent they established was ordained to facilitate negotiations on other interstate streams — as it did for the Pecos River basin in New Mexico and Texas beginning soon thereafter.

Another example of a critical water based interstate problem related to the operation of Boulder Dam of the Boulder Canyon Project discussed earlier. Specifically, there was a weighty problem that had persisted in earlier years and sought solution in 1938 concerning the disposition of power revenues and fixing of rates. It was apparent to all concerned that nothing could be accomplished on resolution of the problems in advance of a common understanding on the part of all the states and all interests within the basin.

Without dwelling on the details of problems and resolution there, I want only to summarize for you the organizational concepts and procedures by which the Boulder Dam issues were resolved. Keeping it simple, the so-called Committee of Fourteen was formed with Judge Clifford H. Stone of the Colorado Water Conservation Board as Chairman. This comprised two members each from the seven states of the Colorado River basin. At times the group met as a Committee of Sixteen to include representation from the Department of Water and Power of Los Angeles and the Metropolitan Water District of Southern California - major recipients of water and power from the project. Also, certain joint meetings were held with the Drainage Basin Committee. A reasonable concensus was reached in time by the committee and appropriate legislative action was then taken by the Congress and supported by those states. As we will learn later, Judge Stone was a leader in water resources issues and he proved a friend to our basin and in national circles.

Harkening back and coming closer to the date span of our other items in the agenda, we have an interesting record in the origin and objectives of our Missouri River States Committee, associated in part with our earlier resume of the National Resources Planning Board's functions in the drainage basin committees. In 1938 our governors appointed state members to the Missouri Drainage Basin Committee. This was the first official recognition on the part of the states of the then-new principle of comprehensive river development.

At a meeting of the Drainage Basin Committee in Bismarck, North Dakota, in December 1941, called by National Resources Planning Board Chairman P. H. Elwood of the Omaha Regional Office and concurred in by Judge Clifford Stone of the Denver NRPB office, it was decided by those assembled that some form of actual states' organization was needed. That meeting showed good attendance by representatives from all sections of the basin — most of the interested federal agencies and public water control agencies of the states, and a considerable number of industrial, commercial and public service people interested in Missouri River development. Later in 1943 Governor M.

Q. Sharpe of South Dakota in commenting on that meeting stated:

> *As the one hundred sixty-eight delegates presented their various views . . ., representing every conceivable kind of interest in the Missouri River valley, including conservation, reclamation, navigation, flood control, and power development, and as the various delegates urged the particular ideas of different localities . . ., it became apparent that there was an urgent need for some general executive committee which could coordinate the efforts and ideas of all these interests and direct them toward some methodical procedure and policy to get results. The Missouri River States Committee simply evolved spontaneously from this apparent need as the sessions . . . continued.*
>
> *The basic idea of the formation of the committee was to secure a committee which would have an official — or at least a semi-official — status in representing the states themselves; and which would also function as a general steering committee . . . for all persons, firms, organizations, public and private, which might be interested in any way in Missouri River development from a basin-wide standpoint. It was recognized that the only way that the Missouri River States would ever get any substantial basin-wide development which would provide for the interests of all of them was for all of them to unite in the management and organization of securing such organization.*

I was among those privileged to attend that meeting. Early on Judge Clifford H. Stone (slide - Judge Stone) was called upon to furnish suggestions as to committee activities based on his experiences in the Colorado River basin. His words were well taken then, in most respects they were taken to heart over the past 42 years in our basin, and they merit our attention for the future. In brief, he said:

1) *No conflicts of interest or jurisdiction or effort should be allowed to exist between the Federal Government and the state governments involved.*
2) *The committee should endeavor to eliminate all conflicts of interest between the states involved.*
3) *The committee should endeavor to eliminate all controversies which may arise from activities of other committees similar to this committee.*
4) *Unless the committee organization and efforts are organized along these lines, one or the other of two results may be expected:*
   (a) Interstate litigation.
   (b) Federal control of the basin.
5) *Basin plans can best be evolved by all of the states putting out into plain statement on the committee table the various projects which they hope to get in each of the several states.*
6) *The first move should be a fact-finding report by engineers to be followed by preliminary discussion of plans.*
7) *Plans and projects of a matter of this scope and importance cannot be made rigid nor static but they must evolve and change as the committee plan and work proceeds.*
8) *The idea of allocation of power revenues, even though the power is generated in the lower basin, so as to use portions of it for general basin development and other portions to be allocated to states above the power site should be considered.*
9) *The committee should consider plans for contacts with related associations . . . which may be working in whole or part toward the same objectives as this committee.*

The Missouri River States Committee came into formal being at a meeting in Billings, Montana, July 29, 1942, with initial representation from five states - Montana, Wyoming, South Dakota, North Dakota and Nebraska. However, those from the states attending were unanimous in stating that if the greatest good were to be accomplished, all states that supplied water of consequence should be included. Responding to an invitation to all governors, Kansas, Iowa, and Missouri joined the following May and Colorado in 1944 — Minnesota somewhat later in 1945.

This discussion would not be adequate without reference to the conceptual perspective in objectives and philosophy shown by the first Committee Chairman O. S. Warden of Montana and first Secretary and first Permanent Chairman Governor M. Q. Sharpe of South Dakota at the first full meeting in Omaha on May 21, 1943. Here I should say that we owe much to Garland Hershey of Iowa who prepared a History of the Missouri River States Committee in 1963 and where I have drawn on it freely in this resume. In opening that important session Mr. Warden said (slide - O.W. Warden):

> *There was agreement in the session in Billings that the full and ultimate work of this Committee would be to bring about in the Missouri River watershed and its tributaries the greatest sum total of benefits from the waters brought into usefulness in the entire region affected, all the way from the headwaters to its confluence - this to include domestic water supplies, irrigation, flood control."* and *"I think there is a marvelous opportunity for cooperation between the people of these states, and I see no reason why we should not go about it in a reasonable way, without strife, conflict, or litigation.*

Extending these remarks Governor Sharpe (slide - Gov. M.Q. Sharpe) said, among other things:

> *As soon as the joint community interest of all the states is recognized it then becomes plain that all the states will have a much better opportunity to obtain development for their mutual benefit if they all act together under the direction of some kind of steering or executive or liaison committee which will view the development from a valley-wide standpoint, and the rights of every state will be impartially guarded and provided for.*
>
> *It is plain also that a valley-wide plan of development has some attractive possibilities as an aid to any postwar readjustment because of the amounts of labor and material that it would require. A development of this kind could logically be financed by the federal government with the prospect of ultimate repayment through the proceeds of power, irrigation, and other revenues which the development would produce. The development would have the attractive possibility of affording a large amount of postwar employment and material expenditure, and with the added feature that the country would have a great internal improvement of lasting benefit as a result. In other words, the federal underwriting of the finances would produce postwar adjustment aid, and at the same time we would have the property and development which the finance had assisted.*
>
> *Here is what appeals to me about this situation. The people who inhabit this Missouri valley are practically all the same kind of people. We have state lines and interests and state patriotism, but this region from St. Louis up represents the land into which, from the crowded industrial area of the earlier days, came what we affectionately refer to as the pioneers our parents and grandparents. They came to an almost uninhabited wild-life country, with such physical features as the Missouri River running through it. Their job of starting from scratch and building the great inland empire now growing in the Missouri valley shows what kind of people they were and what can be done by united effort. Now that we have more education and better mechanics and engineering, it looks as if these present inhabitants with the same background should have the initiative and the intelligence and the methods to go ahead and translate into actual, sensible development these great natural resources, which would practically step us up to another plane where the whole valley would be protected from flood, and flooded with electric lights and power, subsistence farmsteads, and developments of all kinds.*

Rounding out and important to that meeting and what was to follow were reports on "Federal Plans and Programs for the Missouri River Watershed" delivered by Colonel Lewis A. Pick and Mr. W. Glenn Sloan. You will hear more on this subject later in the program. However, I would like to repeat one statement made by Mr. P. H. Elwood, Chairman of the Omaha Office, National Resources Planning Board, near the end of the session; he said:

> *I am very happy to see this group here and to learn you are continuing along the lines we had hoped would be followed when we first suggested this type of meeting. By understanding each other, conflicts will disappear. In recent years we have noted one of the greatest difficulties in government has been misunderstanding and misinterpretation of the other man's ideas and points of view. As Judge Stone said, 'We read about it in the papers without knowing the man or his program. He begins to have horns, and we conjure ideas which never existed. Until we get around a table like this, we will never get far.'*

During 1943 a series of special meetings was held at seven locations in all states but North Dakota, Colorado and Minnesota for the purpose of giving and getting information and securing unified support for a water resources development plan. They were conducted by a traveling committee comprised of the Chairman of Missouri River States Committee, Col. Lewis A. Pick of the Corps of Engineers, W. Glenn Sloan of the Bureau of Reclamation, various members of the Congress, and heads of Federal Government departments and agencies. The governor of the host state for each of the meetings attended and presided. Much interest was aroused, a unification of effort was secured and joint action by the states was organized to get the comprehensive Pick-Sloan Plan adopted and financed by the United States.

An intervening committee meeting in March furthered these objectives, but they took formal, summary expression in a resolution adopted by the eight states (seven by governors) at the August 5-6, 1944 meeting in Omaha. This resolution was widely distributed to Executive and Congressional officials in Washington and to the federal agencies. It earnestly petitioned the President and the Congress to give full force and effect to the following conclusions. They are illustrated by individual slides, and you should note for later reference that they were reflected in substance in the 1944 authorizing legislation:

1) *That in dealing with matters relating to the waters of the Missouri River basin it be recognized that we are dealing with one river and one problem.*
2) *That in approaching that problem and in order to serve all the people of the basin to the maximum possible degree and to safeguard their present established rights and their future development and prosperity, there can be no piecemeal legislative program.*

3) *That there must be an over-all comprehensive plan and suitable legislation adopted by the Congress of the United States which will accomplish that purpose.*
4) *That the omnibus flood control bill, insofar as it deals with the Missouri River, furnishes the framework for flood control and related purposes.*
5) *That authorization of the Bureau of Reclamation plan now before Congress and embodied in the senate document 191-78th Congress, second session, is necessary to a comprehensive development of the Missouri River basin.*
6) *That those provisions of the Rivers and Harbors omnibus bill which relate to navigation on the Missouri River below Sioux City, Iowa, vitally affect the economic life and plans for future development of the entire Missouri River basin.*
7) *That to develop the basin fully and for the greatest benefit of its citizens, both present and future, and for the greatest benefit to the United States of America, the Congress of the United States should recognize now the problem in its entirety as it affects the people of the Missouri basin and their economic destiny and that of the United States of America.*
8) *That in order to accomplish this unity of purpose and action we ask the President and the Congress of the United States to authorize and direct the United States Army Engineers and the United States Bureau of Reclamation to bring before the Congress a coordinated plan, based on the proposed legislation and official documents heretofore mentioned which will make possible the authorization by the Congress, now, of the Missouri River basin development program in its entirety by such amendments to legislation now pending as are feasible from the standpoint of legislative procedures. (This coordination was accomplished in S.D. 78-247).*

Also, the meeting considered and adopted the following statement embodying the essential elements of the impending O'Mahoney-Milliken Amendment which you will hear more about. This was agreed to by seven of the states. Iowa being absent, its vote was not recorded; the State of Missouri being present and represented did not join in the statement. As you will note by the slide, the statement read:

> *Nothing done in the interests of flood control or navigation shall adversely affect the use of water for irrigation west of the 97th meridian.*

In closing, we could point to other patterns and processes of conceptual resource planning and development that evolved during the 1930's and to the mid-1940's for the Tennessee Valley Authority, the Columbia Basin Project in Washington, the Central Valley Project in California and others. Suffice it to say that each of these and many others, for their respective areas of application, showed a chain of events where new planning concepts and **long gestation periods** resulted ultimately in **deliveries** of myriads of beneficial fallouts. The Congress joined with the states and local sponsors in fathering wealth producing offspring of many types; also, with pyramiding values to their respective areas and the nation. Because of the timing and newer contributions from other areas, as well as our own basin, we inherited a **family** of progressive resource concepts, procedures, experiences, laws and policies. These augered well for our own success as we undertook conception of what was to become the Pick-Sloan Missouri Basin Plan or Program. Having passed through the shadows of earlier settlement and the experiences of the "dirty thirties," we could proceed with vision and hope for our planned course and what lay ahead. I thank you for your kind attention, and I am grateful to participate in and to receive the benefits of this fine meeting.

The Birth Pangs of Pick-Sloan

Mr. Edward Weinberg, *Former Solicitor, U.S Department of the Interior, and currently partner in Duncan, Weinberg and Miller Law Offices, Washington, D.C.*

I was indeed honored by Carroll Hamon's invitation to reminisce with you a bit about the birth of Pick-Sloan. Naturally I hastened to accept. Who could resist an opportunity to gab about what it was like in the old days to an audience which, for the most part, wasn't there and therefore can't contradict the speaker?

Honesty compels me to admit that while I was present at the birth, I was by no means one of the attending physicians. I had joined the ranks of the Bureau of Reclamation in January of 1944, as the final year of congressional hearings, intense lobbying, meetings in and out of Washington and congressional debate was about to get underway. I would be deceiving you, however, if I were to suggest that, at the age of twenty-five, less than three years out of law school, and until just three months before never having even heard of the Bureau of Reclamation or, for that matter, of the Corps of Engineers, I played a major role in the events of 1944. Mine was the role of a "go-fer" — you know, one who is told by his bosses to "go-fer" this and "go-fer" that. I did some background legal research, principally on the Federal Government's powers under the commerce clause of the Constitution to control the use of waters from the watersheds of navigable rivers — believe me, those powers are, constitutionally, awesome indeed — regardless of water rights and priorities derived from state law, and I was a briefcase carrier and spectator at some of the congressional hearings. Back at the office, I helped with preparation of various materials for the legislative effort.

One of those who could lay legitimate claim to having been a mover and shaper of Pick-Sloan, J. R. "Randy" Riter, passed from this earth not very long ago. Many of you will remember Randy — he was the Bureau's chief hydrologist for many, many years and was one of the two representatives of the Bureau (Glenn Sloan was the other) who participated in the Omaha negotiations, the famous, or infamous, depending on your perspective, "shotgun wedding," October 16-17, 1944, which coordinated the Pick and Sloan Plans and which is enshrined in Senate Document 247.

In recounting the events of 1943 and 1944, I am not, of course, depending solely, or even primarily, on a memory now dimmed by the passage of four decades. In addition to reviewing my own files, my sources are files of the Interior Department, the House and Senate hearings, committee reports and debates and, to a very considerable degree, a 320-page book by one Marian E. Ridgeway, entitled *The Missouri Basin's Pick-Sloan Plan — a Case Study in Congressional Policy Determination* published in 1955 by the University of Illinois Press. Except as otherwise credited, however, the descriptions and conclusions you will hear from me are mine.

Paul Harley has traced the roots of Pick-Sloan from the first stirrings of the concept of large-scale multiple-purpose development in the setting of an entire or major part of a river basin, in the Boulder Canyon Project Act of 1928 and in the "308" through the thirties when our Nation was shaking off the twin scourges of depression and drought, to the immediate triggering effect — the especially severe Missouri basin floods of 1943, which had disrupted war swollen needs for transportation and crop production. To continue the metaphor, Paul took you to the door of the delivery room. In the fashion which has become popular with today's parents, we now enter to witness the lengthy and, if I may so so, rancorous and convulsive birth pangs.

Make no mistake about it. Pick-Sloan was not born of a starry-eyed courtship between the Bureau of Reclamation and the Corps of Engineers and their constituencies. It was war! It was, in point of fact, not just a two-way war, but a three-way struggle. For in the background there lurked a common foe — the spectre, as both sides saw it, of a Missouri Valley Authority.

MVA was supported by the President of the United States (who, by the way, when the chips were down, nevertheless supported the Bureau and the irrigation interests in the basin), by a powerful newspaper, the St. Louis Post-Dispatch, and by Senator Jim Murray of Montana. The threat of the MVA was a constant reminder that the Corps and the Bureau and their partisans didn't have the field to themselves. The threat of an MVA, I am convinced, was a very real contributing

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Mr. Weinberg ended 26 years of government service in 1969 when he left the post of Solicitor of the Department of the Interior. During his governmental career, he served the Department of the Interior as an attorney in the Bureau of Reclamation, Assistant Chief Counsel for Power and Project Planning, Assistant Solicitor for Power, Associate Solicitor for Water and Power, Deputy Solicitor, and Solicitor. As Solicitor and Deputy Solicitor, he directed a staff of approximately 200 attorneys and was responsible for all Department legal activities. Mr. Weinberg received the Department of the Interior's highest award, the Distinguished Service Award, for his services in the negotiation of the Columbia River Treaty between the United States and Canada. He also has wide experience in drafting major natural resource legislation, including the Colorado River Basin Project Act, the Colorado River Storage Project Act, the National Water Commission Act, and the Flood Control Act of 1944.

Since entering private law practice, Mr. Weinberg has served as a principal legal consultant for the National Water Commission. He has also represented the Alaska Federation of Natives before Congress and has been extensively involved in the negotiation of large-scale wholesale coal purchase contracts to provide fuel for municipally-owned electric utilities. Since the summer of 1982, Mr. Weinberg has also served as a Special Deputy Attorney General for the State of Nevada. He holds A.B. and LL.B. degrees from the University of Wisconsin.

factor to the willingness of the Bureau and the Corps to reach an agreement.

What we know as the Pick-Sloan Plan was enacted as Section 9 of the Flood Control Act of 1944, which began as H.R. 4485 introduced on March 27, 1944 by Will M. Whittington of Mississippi, Chairman of the House Committee on Flood Control, after extensive preliminary hearings the year before on flood control proposals throughout the United States. It was, in fact, at the "kick-off" hearing on May 13, 1943 that the Corps' activities in the Missouri River basin were first discussed by Col. Pick, then the Division Engineer at Omaha. After hearing the Colonel, the Committee asked the Corps to review its previous reports on Missouri River basin flood control to determine whether changes should be made from Sioux City to its mouth.

It was in response to that request that Col. Pick was assigned to prepare the report that became known as the Pick Plan (House Doc. No. 475, 78th Cong., 2d Sess.). Col. Pick's report was completed in a matter of months and was sent to Washington on August 10, 1943. The Chief of Engineers, after receiving comments from other federal agencies (FPC, Agriculture and the Bureau of Reclamation) transmitted it with his own comments to Secretary of War Stimson on December 31, 1943. Secretary Stimson submitted it to Congress on February 28, 1944, along with the comments of the Bureau of the Budget.

However, H.R. 4855 was only one part of the legislative story, for Pick-Sloan was intertwined with the Rivers and Harbors bill (H.R. 3961) that had started its congressional journey on January 13, 1944, having been 151troduced by Representative Joseph J. Mansfield of Texas, Chairman of the House Committee on Flood Control. Yes, in those days, there were separate House Committees on Flood Control and Navigation. Among other things, H.R. 3961 proposed to authorize a 9-foot deep, 300 feet wide navigable channel on the Missouri from Sioux Falls to its mouth in place of the existing authorization for a 6-foot channel, 200 feet wide. It was this proposed increase in the navigation authorization, with its potential for a substantial increase in the call of navigation below Sioux City on the waters of the entire upstream Missouri basin watershed, that put the fat in the fire.

There is yet a third element of legislation that is inseparably linked to Pick-Sloan. That is Section 1 of the 1944 Flood Control Act — the so-called O'Mahoney-Millikin Amendment.

What we know as Pick-Sloan, therefore, rests on a three-legged legislative stool, each leg of which was an essential element of the whole.

The O'Mahoney-Millikin Amendment (so-called after its two principal sponsors; it was, in fact, sponsored by 19 other senators) was added on the Senate floor to both H.R. 4485 and H.R. 3961. Without going into detail, it consisted, as adopted, of a general statement of policy implemented by two parts. The first, applicable only to future water project authorizations, requires the Secretary of War (now, of course, the Secretary of the Army) and the Secretary of the Interior to formally consult with each other and with each affected state in project formulation and further requires that the comments and recommendations of each affected state and of the other Secretary be included in the transmittal of the proposal to Congress. The other part, applicable only to the projects authorized in the two bills to which it was attached, restricts the use for navigation of waters arising in states lying wholly or partially west of the 98th meridian to such use as does not conflict with any beneficial consumptive use of such water, present or future, in states lying wholly or partly west of the 98th meridian, for domestic, municipal, stock water, irrigation, mining or industrial purposes.

The Amendment has been incorporated by reference in most Omnibus Flood Control and Rivers and Harbors Acts since 1944.

While the Washington legislative front was quiescent during 1943, things were moving in the basin itself.

As for the Bureau of Reclamation, by 1943, it was in the fifth year of completing what became, in May of 1944, Senate Document 191, 78th Congress, the Sloan Plan. It was prepared under the direct supervision and guidance of W. Glenn Sloan who, by November of 1943, had become the Assistant Regional Director at Billings.

As for the Corps, not only was Col. Pick putting together what became House Document 475, he was also talking up his plan at numerous meetings throughout the basin. Both agencies were also gearing up in Washington and in the field for the coming year's legislative efforts.

I never had the pleasure of meeting Lewis Pick. I did get to know Glenn (that was his middle name; his first name was William, but no one that I know of ever called him by that name). Interestingly enough, although he was the acknowledged author of the Sloan Plan, one looks in vain through Senate Document 191 for so much as a mention of his name. Senate Document 191 simply credits the report to "the Bureau of Reclamation staff of Region 6."

Anonymous though he was in Senate Document 191, Glenn Sloan was no shrinking violet. He could be blunt. He was always outspoken.

So, too, were the high officials of the Corps with whom he took issue.

The transcripts of the Senate Commerce Committee Hearings on both H.R. 4485 and on H.R. 3561 contain a number of sharp and blunt exchanges between Glenn Sloan and Col. Reber and Major General Robins, then Chief of Engineers. And General Robins, in the presence of both Senators Millikin and O'Mahoney at a May 10, 1944 hearing on H.R. 3961, characterized the then-proposed amendment that bore their names as "this crazy amendment."

Glenn Sloan and Lewis Pick appeared together on a number of occasions in the *Summer of '43,* if I may borrow the title of the movie by that name. Through them, each agency was busy pushing its point of view.

As early as 1942, the Missouri Valley Regional Planning Commission, an adjunct to the National Resources Planning Board, composed of delegates appointed by the governors of each of the eight basin states and by the Departments of War, Agriculture and Interior, prophetically pointed out the potential conflict between navigation and other uses of Missouri River water and observed that consumptive use developments were in direct conflict with navigation. It saw an immediate need for a statement of principles of priority for Missouri River water.

As 1944 opened, the Sloan Plan was still four months away from officially reaching Congress, let alone being discussed as such in committee hearings. However, its underlying theses of greater emphasis on upstream irrigation and power development, while incorporating the Corps' flood control and navigation proposals below Sioux City, were well known. Crystalizing by that time also was a concern in the upper basin for a restatement of water priorities in which consumptive uses would be preferred over navigation uses.

These concerns about the increased demands of water for navigation, as well as the broad outlines of the Sloan Plan, had already officially surfaced in the comments of the Bureau of Reclamation on the Pick Plan which Commissioner of Reclamation Harry Bashore had sent Major General Reybold, then the Chief of Engineers, on December 17, 1943, and which was included in House Document No. 475.

While all reservoirs included in the comprehensive plan should, Commissioner Bashore recommended, be operated to obtain maximum benefits in common for all beneficial purposes that could be served, and he ticked off the whole laundry list, he cautioned that, and here I quote:

> *To the extent that several functions of water control and utilization are conflicting, preference should be given to functions which contribute most significantly to the welfare and livelihood of the largest number of people.*

And to make sure that everyone would understand exactly what he was most concerned about, Bashore added:

> *It is, for example, the view of the Bureau of Reclamation, that the waters of the Missouri River and its tributaries west or entering Sioux City are more useful to more people if utilized for domestic, agricultural, and industrial purposes than for navigation improvement purposes. To the extent that these uses are competitive, domestic, agricultural, and industrial uses should have preference.*

To resolve interagency jurisdictional disputes, the Commissioner recommended what is commonly called "the dominant interest" rule: The Corps should construct and operate any feature of the comprehensive development in which flood control and navigation are the dominant considerations and the Bureau should construct and operate any feature in which the functions of irrigation, restoration of surface and ground water levels and power are dominant. There would be consultation by the dominant agency with the other where any feature served the purposes of the latter. The Commissioner recognized that under the dominant interest rule, the main stem reservoirs below Fort Peck would be the Corps' responsibility.

Major General Reybold responded with what amounted to concurrence with the Commissioner on the dominant interest principle (emphasizing that it would keep the Corps in control of all of the main stem reservoirs). However, in summarizing the Bashore letter, he did not mention the Bureau's view that upstream consumptive uses should have priority over navigation below Sioux Falls. Nevertheless, he referred obliquely to that issue and made clear the Corps' view:

> *. . . The adjustment of water use to meet the changing needs of the Missouri Basin as a whole can and will be made as the comprehensive development proceeds step-by-step toward ultimate accomplishment. When completed the basin plan will be operated for maximum multiple-purpose use. Thus preference can be given to the functions which contribute most significantly to the welfare and livelihood of the people of various parts of the basin, and at the same time adequate steps can be taken to meet new economic situations that may arise in the future.*

This, of course, left wide open such questions as who would make the judgment calls and under what standards.

The Chief's ambiguities did not escape the notice of the Director of the Bureau of the Budget (today's Office of Budget and Management). While not objecting to transmittal of the Pick Plan to Congress, the Budget Director advised that its authorization would not at that time be in accord with the President's program. He noted the apparent difference of opinion between the Corps and the Bureau on the question of priorities in the use and control of Missouri River system water areas west of or above Sioux City and added that further advice as to consistence with the President's program would be forthcoming after, among other things, consideration of the Bureau's forthcoming plan and the Chief of Engineers provided additional details on the ultimate relationship that should prevail among the Corps' recommended flood control plan, the proposed 9-foot channel, and upstream uses of water.

This was the situation when the second session of the 78th Congress convened and the final, decisive legislative struggle opened.

As I have already said, there were separate Committees on Flood Control and on Navigation in the House of Representatives. The Flood Control Committee had jurisdiction over the Pick Plan, the Navigation Committee over the 9-foot channel proposal.

Both Committees maintained extremely close relationships with the Corps of Engineers, and it was rare indeed when the chairmen and the majority of the committee members did not see eye-to-eye with the Corps and vice-versa. The Pick Plan and the 9-foot channel were not among those rare occasions. There were few members from the Missouri basin states on either Committee.

On the Senate side, jurisdiction was not quite as diffused. Both navigation and flood control were under a single committee, the Commerce Committee, chaired by Senator Josiah W. Bailey of North Carolina. However, separate subcommittees, each chaired by Senator John H. Overton of Louisiana, handled H.R. 3961 and H.R. 4485.

On the full Commerce Committee of 20 members, only two, democrat Bennett Champ Clark of Missouri and republican Edward V. Robertson of Wyoming, were from Missouri basin states. Both served on the 12 member subcommittee that considered H.R. 3961. Clark was also the senior democrat, and the only member from a Missouri basin state, that heard testimony on H.R. 4485.

Bennett Clark was among the most active, outspoken supporters of the Pick Plan in committee. Senator Robertson, on the other hand, stoutly defended the subordination of navigation to upstream beneficial uses and, as we shall see, filed a lonely but extensive minority report when the Commerce Committee reported favorably on H.R. 3961 authorizing the 9-foot channel.

There were also House and Senate Committees on Irrigation and Reclamation. However, because the Corps had gotten the legislative jump on the Bureau, neither of these Committees had an official hand in shaping what became the Pick-Sloan authorization.

Returning to the Senate Commerce Committee, Senators Overton and Bailey were, like their House opposite numbers, among the most powerful members of Congress. They and the Corps of Engineers invariably saw eye-to-eye and their reception of both the Pick Plan and of the 9-foot channel was enthusiastic. They had no use for the O'Mahoney-Millikin Amendment.

Neither Senators O'Mahoney nor Millikin were members of the Senate Commerce Committee, although under Senatorial courtesy each was permitted to be present and to question witnesses, privileges of which they availed themselves fully indeed. They, too, were powers in the Senate.

Before discussing the 1944 congressional actions, one other matter bears mentioning. I refer to the open and sharp disagreements between the Bureau and the Corps. Inter-agency disagreements of course occur today. However, in today's atmosphere, in which maintenance of a facade of unity has become a fetish, it is inconceivable that OMB would permit official reports expressing candid and fundamental differences between agencies and with the OMB itself to see the light of day, much less permit the disputant agencies to testify frankly before congressional committees as to their disagreements.

As for myself, "Give me the good old days." FDR had it right when he told the St. Louis Post-Dispatch, on November 15, 1944, after the Corps-Bureau Omaha compromise had been reached, that it was a good idea to have some rivalry among government agencies.

And now to the events in Congress in 1944. As the second session of the 97th Congress commenced, Chairman Mansfield, on January 13, introduced the Omnibus Rivers and Harbors bill as H.R. 3961, upon which the Committee had already held hearings in October and November 1943. On the day of the bill's introduction, perfunctory testimony was heard from the Corps favoring the increase in the Missouri River navigation project from Sioux City to the mouth of the river from a 6- to a 9-foot channel, 300 feet wide. Congressman Buffett of Nebraska was the only other witness. He testified briefly in favor. The entire testimony on the subject takes up only a printed page of the hearings. There was no mention of a possible impact on upstream uses.

Six days after its introduction, the Rivers and Harbors Committee reported H.R. 3961 favorably, with the authorization for the 9-foot navigation channel included, as recommended by the Corps. There was no mention of possible conflict with upstream development, nor for that matter, of the Pick Plan. This was a navigation bill, the Corps had recommended what appeared to be a minor improvement (initial cost estimated at $6,000,000) to an existing project and that was that.

But, in reality, that was not that. A hue and cry arose in the upstream states. The National Reclamation Association sounded the alarm.

On February 7, 1944, President Roosevelt wrote Chairman Mansfield expressing his concern, among other matters, over the 9-foot channel for the Missouri below Sioux City. While favoring the improvement itself, FDR considered that the authorization "does not adequately recognize the legitimate need of the states in the upper Missouri River basin for certain essentials to the continued development of this agricultural economy." The President saw no reason why the Missouri River could not be made to serve the interests of both navigation in the lower basin and of irrigation and other consumptive uses in the upper basin. "[T]o safeguard the up-stream states against the unreasonable withdrawals of water for down-stream development," the President asked for an amendment declaring that the beneficial use of water in the upper basin not be affected by the proposed wider and deeper channel.

The National Reclamation Association informed its members in the Missouri River basin not only of the President's letter but also that "thirty or forty western congressmen, at a meeting called by Congressman Robinson of Utah, had decided to seek an amendment protecting the entire West, rather than just the Missouri River." That amendment was a version of what became the O'Mahoney-Millikin Amendment.

The House Rivers and Harbors Committee took the unusual step of reopening its hearings even though it had already reported the bill, to hear testimony on the issue.

On February 18, Governor Moses of North Dakota testified for himself and Governors Ford of Montana and Hunt of Wyoming. They had also testified the day before at the Flood Control Committee's hearings on H.R. 4485.

The governors were astonished and dismayed to discover that the Rivers and Harbors Committee had reported out H.R. 3961 with the 9-foot channel. They regarded that authorization as establishing by law a claim to what amounted to almost all of the entire average flow of the Missouri at Kansas City. They asked that the bill be amended to protect the rights of the upper basin states to an equitable portion of the Missouri's waters for consumptive use. They urged that the Bureau and the Corps compromise their differences promptly and that there be expedited consideration of an over-all Missouri River program by all the interested committees of Congress. Finally, they

informed the Committee that the eight governors of the Missouri basin, through the Missouri River States Committee, were about to begin intensive meetings to try to bring about a resolution of the water conflict. The governors' plea was that Congress not take precipitous action, by passing H.R. 3961, thus foreclosing the opportunity to compose the differences that were all too apparent.

Members of the Committee who supported the Corps' proposal protested that the Corps did not intend to require a greater flow of water than what was then going down the stream, that this bill did not appropriate so much as a drop of water for navigation. But that was the problem. What bothered the three governors was that they feared that more water would be required for the 9-foot, 300-foot wide channel than was required for the 6-foot, 200-foot wide channel and that the authorization of the project itself would as a matter of law establish a claim in perpetuity to nearly all the then average flow with no opportunity for the upper basin to establish further rights for consumptive use.

The three governors were not alone in expressing their concern over the implications of a straight-out navigation authorization. Representatives Bill Lemke of North Dakota, Frank Barrett of Wyoming and Mike Mansfield and James O'Connor of Montana testified along the same lines, as did Representative Will Robinson of Utah. Robinson, who was acting chairman of the group of western congressmen that I referred to earlier, proposed the amendment they had agreed upon.

Congressman Francis Case of South Dakota supported the Robinson amendment if the Committee was willing to go along. If it was not, he suggested a compromise, based on the assertion by the Chief of Engineers that the increased channel would not place any additional demands on the waters of the Missouri River over and above those already authorized by water law. Francis Case proposed to write that commitment into the bill. As a member of the Appropriations Committee, he added a veiled threat. While he did not like the idea of inserting limitations in appropriations bills, if the 9-foot channel became law without at least that limitation, he would feel compelled to try to place a prohibition on the use by the Corps of appropriated funds to accomplish a 9-foot channel by increasing the call on water.

One other witness at the February 18 hearing deserves notice — that was Commissioner Bashore of the Bureau. According to the Commissioner, using the Corps' own water flow figures, even a 6-foot channel would greatly deplete the amount of water available for additional upstream irrigation development and the requirements for the 9-foot channel would permit no additional irrigation development at all in the upper basin.

The House took up H.R. 3961 in late March. The Case amendment was offered by the Committee and adopted. All other limitations proposed were voted down. Because the Pick Plan was officially before the House Flood Control Committee as a part of HR 4485, the testimony before it on Missouri River basin matters was considerably broader in scope than had been the case with the one-day hearing before the Rivers and Harbors Committee. However, while giving the upstream interests (and the Bureau of Reclamation) a lot more time, they got the same short-shrift, insofar as results were concerned, that they had received from the Rivers and Harbors Committee.

In addition to Governors Moses, Ford and Hunt who testified along the same lines as they had in the Rivers and Harbors hearing, a fourth governor testified before the Flood Control Committee, Governor M. Q. Sharpe of South Dakota, who had become the Chairman of the eight-state Missouri River States Committee.

Emphasizing that he was speaking for himself rather than for the Committee, Governor Sharpe refused to take sides. Differing with his colleagues from North Dakota, Wyoming and Montana, he believed the upstream-downstream conflict to be more apparent than real. He endorsed the Pick Plan and considered that over time, the apparent conflict would be resolved by building more storage and by adjusting to conditions as they developed. One solution he thought might be to turn Ft. Peck into a reclamation reservoir, substituting navigation storage downstream. The interests of both navigation and flood control could be resolved, he believed, by keeping the Pick Plan flexible, by further engineering works and "reasonable compact negotiations between the states and the federal government."

The one legislative reservation Governor Sharpe recommended was that Congress should add a proviso to the authorization of the Pick Plan to the effect that its authorization and the construction and the uses of water should not be construed as setting up a permanently vested right in either reclamation or navigation or power or flood control, but that it should always be subject to the reserved right of Congress to alter them as they think best for the communities and for the country at large.

In the end, the Committee, on March 29, 1944, reported out H.R. 4485 with the Pick Plan authorized subject only to the substance of the Case amendment that had already been added to the Rivers and Harbors bill. The Case amendment, the Committee believed, clearly affirmed the intention of the Corps to reassure the residents in the upper Missouri basin.

On the floor of the House, the western interests favoring a stronger protection for future upstream consumptive uses fared no better than they had in the case of H.R. 3561.

This time, Congressmen Bill Lemke and Burdick, both from North Dakota, carried the hod for stronger protection. That "Burdick," by the way, is referred to these days as "Old Burdick" to distinguish him from his son, the present Senator who, even today in his seventh decade, is known as "Young Burdick." Carl Curtis of Nebraska and Francis Case of South Dakota supported the Committee's action. The Case amendment remained intact by a narrow margin, just as in the Rivers and Harbors bill. The bill passed the House on May 9, just a few days after the Sloan Plan had finally made it to Capitol Hill.

So at what in football terms would be considered the end of the first half, in the House the score stood the Corps 1, the Bureau 0, and the action passed to the Senate.

By now, the upstream water interests were thoroughly aroused. They foresaw not only a loss of Bureau jurisdiction to the Corps if the Sloan Plan was not authorized, but also, bureaucratic struggles aside, they shuddered at the possibility, indeed the probability if things didn't change, that Congress, exercising its plenary control over interstate commerce, would enact a law that would sweep aside western state water law, with its emphasis on beneficial consumptive uses of water.

The arrival on the Hill at long last of the Sloan Plan gave the upstream forces something specific to focus on. Their legislative strategy and tactics were in the hands of two senatorial heavyweights, Senators Joe O'Mahoney and Eugene Millikin, one a leading democrat, the other a leading republican.

The Bureau of Reclamation was not only testifying directly, but also was heavily involved behind the scenes in both preparing legislative material for use of the upstream forces and working directly with them in strategy sessions. And, of course, so was the Corps and its allies, especially the National Rivers and Harbors Congress, on the other side.

The upstream forces, however, also had the continued support of FDR. While he openly urged MVA as the operational solution for the Missouri River basin, he nevertheless championed the O'Mahoney-Millikin Amendment to protect upstream development of irrigation against downstream navigation. He twice wrote Senator Overton in June supporting these concepts.

And support developed from the Vermont Senators, Aiken and Austin, because of what Vermonters regarded as the unreasonable refusal of the Corps to have consulted with and considered the views of that state concerning the Corps' flood control plans in the Connecticut River.

In the early Senate going, however, neither the Sloan Plan, the western senators and their eastern allies, nor, for that matter, FDR, fared particularly well.

After heated and at times ascerbic committee hearings on H.R. 4485, the Senate Commerce Committee reported it out in a form which not only accepted the House passed bill's provisions for the Missouri basin, but added an amendment (offered by Senator Clark of Missouri) that created a ***Missouri River Commission*** in the War Department, modelled on the existing Mississippi River Commission. The Commission would be involved, under the direction of the Secretary of War and the supervision of the Chief of Engineers, in planning, constructing, operating and maintaining improvements for navigation and flood control in the Missouri River basin. This would have left the Corps in virtually complete control of the future development of the Missouri River basin.

The Senate Committee report specifically rejected the O'Mahoney-Millikin Amendment and any similar amendments that might be offered.

The westerners, the Bureau and their allies had fared no better in committee with HR 3961, the Rivers and Harbors bill. There, too, they had made an intensive effort without success. Wearing his other hat as chairman of the Subcommittee on Rivers and Harbors, Senator Overton had brought in a Commerce Committee report that left unchanged the House approved 9-foot deep, 300-foot wide navigation channel from Sioux Falls to the mouth of the river. The report made not even a mention of the fight over Missouri River basin development. However, Senator Robertson of Wyoming who, unlike Senators O'Mahoney and Millikin, was a member of the Commerce Committee, filed a lonely dissent decrying the Committee's failure to adopt, or even to address, the O'Mahoney-Millikin Amendment and the issues that had prompted it.

Despite this seeming success of the navigation interests, things were beginning to happen backstage that would ultimately turn matters around. It was informally agreed to put off Senate floor action on both bills until the fall. This was prompted not only by the fight over the Missouri basin and the O'Mahoney-Millikin Amendments, but by a number of other controversial issues. Among these were the public versus private power fight over the preference clause and government construction of transmission lines (the so-called Bailey Amendment), whether the excess land laws would apply to the irrigation use of Corps reservoir in California (the so-called Elliott Amendment), whether the Corps could market irrigation water from its reservoirs, and which agency would build the Kings and Kern River projects in California.

Increasingly, the issues of consultation with the affected states in planning and the integrity of state law respecting the appropriation, control and uses of water were being seen as state's rights issues, with the Corps cast in the role of a domineering, federal presence intent on riding roughshod over state water law.

This came as both a shock and a surprise to the Corps which prided itself on its ability to get along with "local interests." It must have been all the more galling to the Corps because the more its top command protested that it was flexible, that it afforded ample opportunities for consultation and that the Pick Plan and the 9-foot channel would not threaten "sensible" irrigation (the term was Col. Reber's), the more it was met with cries, not only from the West but from the East as well, of "We don't trust you!"

Here, to cite one example, is what Senator O'Mahoney had to say to General Robins, after the General had described the O'Mahoney-Millikin Amendment as "crazy" and had explained how careful the Corps was not to use its admitted navigation power "ruthlessly."

> *You want the people of the State of Idaho [the lower Snake River navigation project presented an upstream against downstream issue similar to that presented by the nine-foot channel for the lower Missouri] and the citizens of the Upper Basin States to be dependent on the good will of the Secretary of War and his successors. I realize, too, how wise the Army engineers are and how they can judge between a crazy and a sane plan; but I am not ready, for my part, to commit the people of the West to dependency upon the judgment of the War Department.*

If anyone is interested in the source of that quotation, it will be found at page 812 of Part 6 of the Senate Committee Hearings on H.R. 3961. Senator Millikin echoed Senator O'Mahoney's sentiments.

The Corps' problem was that, at bottom, federal, that is to say, congressional, control over the use of the Nation's navigable waters is a matter of fundamental pre-eminence under the commerce clause of the United States Constitution. The Federal Government could, under the Constitution, require the release of water from non-navigable tributaries, state law to the contrary notwithstanding. That power is subject to limitation by Congress. However, unlike the Bureau of Reclamation, no law under which the Corps then operated commanded the Corps to either comply with state water law priorities or to protect other, competing uses of water. A problem of this magnitude simply could not be resolved by policy statements of the executive branch whose terms in office are but temporary.

The overriding federal constitutional dominance on which the Corps' navigation (and flood control) orientation rested had only recently been again demonstrated by the Supreme Court's decision in what is known as the **New River** case [**United States v. Appalachian Electric Power Co.,** 311 U.S. 377 (1940)] reaffirming a doctrine going back to 1899, the **Rio Grande** case [**United States v. Rio Grande Dam & Irrigation Co.,** 174 U.S. 690)]. The **New River** case specifically acknowledged that the commerce clause power to protect and improve navigation reached non-navigable waters.

To give specific form and direction to the campaign against federal dominance over state law, what was styled a "Water Conservation Conference" was held in Chicago on September 7 and 8, 1944. The Conference was called by the National Reclamation Association's Committee on Preservation of Integrity of State Water Laws, the Interstate Commission of the Delaware River Basin, the Texas Delegation to the July 1944 special meeting of the National Rivers and Harbors Congress at which the NRHC had gone on record as opposing the O'Mahoney-Millikin Amendments in much the same terms as had the Senate Commerce Committee in its report on H.R. 4485, and the Northeastern States Conservation Conference. Delegates from 29 states and the District of Columbia attended that meeting.

The drafting committee was chaired by Judge Clifford H. Stone of Colorado, an acknowledged expert on state water law and a leading opponent of federal dominance. Another member was E. W. Rising of Idaho, a guiding spirit of the National Reclamation Association. Senators O'Mahoney and Millikin were advisers to the drafting committee. Representative Francis Case was in attendance, as were representatives of the Bureau of Reclamation. The Resolutions Committee was headed by Robert Sawyer of Oregon, then the President of the National Reclamation Association. The Bureau's lawyers served as technical draftsmen.

The O'Mahoney-Millikin Amendment was redrafted, polished and endorsed, and both H.R. 4485 and H.R. 3561 were described in a resolution as inimical to certain aspects of the "sovereign rights and interests of the states."

This same gathering, obviously, had little use for what they considered a threat to state's rights every bit as, and even more, inimical than the Corps — the valley authority concept. Whatever momentum that was developing for the MVA was given a mortal blow by the Chicago meeting. Nor, for that matter, were many of the delegates supportive of the Bureau in the controversy over the application to Corps projects of the excess land provisions of the reclamation law.

At about the same time as the Chicago meeting, sentiment finally crystalized for the Corps and the Bureau to stop shelling each other and get together on a coordinated Missouri River basin plan.

The Missouri River States Committee had met in Omaha on August 5 and 6. Eight of the nine basin state governors (the Governor of Iowa being absent when the vote was taken) adopted a resolution calling on the President and the Congress to force the Corps and the Bureau to reconcile their plans and come forth with a coordinated plan for the Missouri, recognizing it as one river with one problem.

The underlying message of the governors was "Knock some heads together and come up with a single plan that recognized that the basin must be treated as a whole and in that whole do not let the 9-foot channel swallow up all the basin's water."

To make sure that the message was not misunderstood, seven of the nine governors (again Iowa was absent and Missouri, quote, "did not choose to join," unquote) adopted an additional statement that, "Nothing done in the interests of flood control or navigation shall adversely affect the use of water for irrigation west of the ninety-seventh meridian."

President Roosevelt transmitted the Omaha resolution to the Congress in a special message. FDR, expressing himself in hearty agreement with the resolution, chose to use it to call on Congress to do something that the governors had not mentioned — to create a Missouri Valley Authority.

With the President talking MVA, the Bureau and Corps, no doubt spurred on by that dreaded possibility as well as by pressures from the Chicago meeting, finally held their own summit meeting in Omaha on October 16 and 17 and fashioned the great compromise, or as many rather irreverently called it, "the shotgun wedding." Representing the Bureau were Glenn Sloan and Randy Riter, the latter being the acting director of the branch of project planning of the Bureau. Representing the Corps were Brigadier General R. C. Crawford, by then the Corps' Omaha Division Engineer, and Gail Hathaway, the Corps' head civilian engineer, representing the Chief of Engineers.

The Corps-Bureau reconciliation agreement was sent to Congress not once, but twice. Senator O'Mahoney filed it with the Senate on November 21, 1944, as Senate Document 247. It is this document which is referred to in Section 9 of the Flood Control Act of 1944 as the document which revises and coordinates House Document 475 (the Pick Plan) and Senate Document 191 (the Sloan Plan).

President Roosevelt transmitted it a week later, on November 27. No doubt the delays inherent in the bureaucracy's going through official channels enabled Senator O'Mahoney to beat the President to the punch. FDR's transmittal was printed as a House Document — House Document 784. He recommended that the plan of the Corps and the Bureau as coordinated be authorized, while once again calling for creation of an MVA to "administer" the plan. That call fell on deaf ears.

The Bureau and the Corps were together at last and the House and Senate leadership had agreed to accept a somewhat modified O'Mahoney-Millikin Amendment and thus to adopt and authorize the now coordinated Pick-Sloan Plan.

When the Senate resumed its debate on H.R. 4485 in mid-November, the whole package was accepted unanimously without even a record vote. Among other things it wiped out the Clark amendment for a Missouri River Commission and the Case amendment that would have specifically restricted the 9-foot channel's call on additional Missouri River water.

H.R. 4485 passed the Senate December 1, and went to conference. The conferees accepted the package with a minor change in the O'Mahoney-Millikin Amendment that eliminated a paragraph which was perceived as too blatantly anti-MVA. While this kept the door ajar for future consideration of an MVA, as we all know, no one chose to walk through it.

The bill was signed into law by President Roosevelt on December 22. In signing it he repeated his call for establishment of an MVA, "which should receive the early consideration of the next Congress." MVA legislation was indeed considered in the next Congress but only in the Senate committees. It lacked the steam to come to a vote in either house.

As for H.R. 3961, while it finally passed the Senate, it died in the congressional adjournment rush. It passed early in the next Congress as S. 34, with the 9-foot channel authorized but subject to the O'Mahoney-Millikin Amendment which was also included.

So at last the baby was born. Both the Corps and the Bureau could now go to work.

Some concluding thoughts:

First, as to who won and who lost. I like to think that everyone was a winner and that there really were no losers. The lower basin states got their flood control and their 9-foot channel. The upper basin got the essential protection it wanted for the development of consumptive uses. The Bureau and the Corps got their reconciled Pick and Sloan Plans. Without the O'Mahoney-Millikin Amendment and the reconciliation of the Pick and Sloan Plans, I think it is fair to say that there would have been no Missouri basin authorization. Had the lower basin interests managed to get the Pick plan and the 9-foot channel through Congress without the Sloan Plan and the O'Mahoney-Millikin Amendment, I suspect that FDR would have vetoed the entire bill. After all, he had just been reelected to a fourth term and he had strongly supported protection for the development of irrigation and other consumptive uses. World War II was still on. The President had little to fear politically from a veto.

That the MVA did not make it may to some represent a loss but, to my way of thinking, the Pick-Sloan authorization recognized there is room for diversity in basinwide, comprehensive development.

Second, that the birth of Pick-Sloan was achieved only after a hard struggle should remind us of the need to be very vigilant in guarding against the emergence of forces which threaten the goals for which Pick-Sloan was authorized.

In reporting out the Garrison Diversion Project reauthorization legislation in 1965, the Senate Interior Committee reminded us of the fundamental commitment represented by the authorization of Pick-Sloan. "It amounted to a compact, ratified by Congress," the Committee said, "assuring the upper basin States that their sacrifice of productive lands to provide benefits for the lower basin would be compensated for by full development of other potentialities in the upper basin States."

This conference provides an opportunity to revisit and revitalize the principles upon which Pick-Sloan came into being. It is a needed step in restoring to the basin the unity of purpose which the Pick-Sloan compromise represented.

I will close these remarks with a statement from the resolution of the Missouri Basin state governors adopted at the Omaha Conference of August 5 and 6, 1944 to which I referred earlier:

> *[I]n dealing with materials relating to the waters of the Missouri River basin, it be recognized that we are dealing with one river and one problem.*

May that principle continue to be the beacon by which the path toward realization of full Missouri basin development is lighted.

Thank you very much for the opportunity to speak with you. It has made me feel 40 years younger.

Discussion Panel

Mr. Gus Karabatsos, *former Chief of Planning, Missouri River Division, U.S. Army Corps of Engineers.*

First of all, I am retired from the Army Corps of Engineers and everything I say up here may or may not be endorsed by the Corps. They are my views. I have done a little bit of research. I don't want to rehash what has already been recounted, but there will be times when I will have to jump into some of that legislative stuff. At the outset let me say to you that I come here to praise Pick and not to bury him. I did not know Glenn Sloan. I think I saw him once at an MBIAC meeting about 1950. I didn't know General Pick personally. I didn't sit at his knee. I was a very young engineer at the time. But I know a few things about the man and some of his thinking. So what I will attempt to do in a few minutes here is maybe give you a little different perspective of Pick-Sloan than you have heard up to this point.

I have segregated this into about five or six little compartments. The first one is called the setting. What started this. Pragmatically, the 1943 flood is what started Pick. At the time Colonel Pick was Division Engineer and just happened to be in the District of Columbia on the 13th of May, 1943, when he was asked by Will Wittington, the Chairman of the House Flood Control Committee, to appear for testimony and questioning about the flood and the events. That started the ball rolling.

At this point in time, a couple of descriptions of Pick might be in order. One observer described him as ". . .an almost nonexistent rarity in the Army, a technician who is also an astute politician, a human being and a driver." Benton Strong of the National Farmers Union described him, however, ". . .as a far better lobbyist than he is a water engineer."

Pick's report followed a resolution of that same day, 13 May, that the House Flood Control Committee passed. Weinberg went through that earlier with you. But, I will assure you that in today's times, what happened back in those days was record speed for putting a report together for developing a project, especially the size of the so-called Pick-Sloan or the main stem dams themselves on the Missouri River. But you have to remember something about the Pick Plan. The report itself was 12 pages long. It was very short on engineering detail and very short on economic detail. There was a statement by Pick that said it is "unquestionably justified." But you have to remember now that what Pick was doing was drawing from the experience of the '308' reports which were what I would call in today's planning environment a good site survey. Everything in the upper basin and lower basin was surveyed for the possibility of multiple purpose development.

But anyway, Pick spent a whole year running up and down the basin explaining the so-called Pick Plan. He stressed flood control and navigation as the main components because that was his basic authority coming from Congress. That's what Congress was telling him to study. But he carefully pointed out his plan was flexible, that it was a framework plan, and that the details had to be worked out later. There are a lot of people who will not buy a concept like that. They have to have everything up front. The only problem with that is you never get from point A to point B. One thing he did rely on very heavily was that his philosophy was to physically maximize water use. He wasn't quite sure what all this meant but we'll see as the events went on, as Ed Weinberg pointed out, certain things happened in Congress that made these come together.

You heard about the Bureau of Reclamation and that they were preparing their report of five years duration and it wasn't quite ready at the time Pick's report went in. So today a lot of us will sit around and say "How in heaven's name could you get two federal agencies within the Administration, both going their separate ways, with an aura of non-coordination." It's probably unthinkable today — I don't think it would happen. But let me give you some of my reasons why I think coordination at that time didn't take place as it should have. You have to remember this was war time. There were manpower shortages. Johnny was off fighting a war. He wasn't playing water engineer on the river. The mechanics of coordination were probably cumbersome, especially when you consider the military on the one hand and the civilians on the other, again in a setting of war time. So there was probably something in there that wasn't meshing. Undoubtedly there were travel problems. Undoubtedly there was turf protection. Mr. Weinberg pointed that out. Finally, we have to recognize egos and who had the political clout. I think a combination of all these led to the early non-coordination. But, I will tell you one thing. Pick had the political clout.

In 1944, Congress was faced with legislation dealing with the Pick Plan, the Sloan Plan, and the thrice-introduced project for nine-foot navigation. From these issues, policies emerged that were beyond institutional remedies and thus, it was up to Congress to write the legislation, for better or for worse, for this basin. I will not go back into the legislative framework because I think Mr. Weinberg did an admirable job of that. I would like to point out a couple of things to you, though. The 1936 Flood Control Act declared that flood control was in the national interest. It was a declaration by the Congress as a national interest for the Federal Government to get into the field of flood control. Then the 1944 Act carried out the framework of all the previous legislation, but did not continue the developmental pattern of the TVA.

As a personal note, there has been some legislation since 1944 and 1945 that I don't think has even approached the significance of the legislation from 1945 back. In fact, I personally think that recent Administrations have continually sought to diminish the federal presence but nothing has been repealed. It's only been emasculated until water policy in this Nation, in my view, is realistically in some disarray at the present time.

We've got to remember the legislation that did come out of 1944 and 1945 was in terms of only partial endorsement of multiple purpose development, decentralize administration, expanded hydro power and revitalized states rights and views on water resources. That's what came out of 1944 and 1945. There were a number of significant issues that came about when all this hit the main stage in Washington. The crux of the whole problem that has been referred to by the previous two speakers was the downstream navigation project. There were questions of the economic feasibility of the project. There were questions on water sufficiency. Debate to this day still takes place on that feature.

GUS J. KARABATSOS

Mr. Karabatsos retired in 1980 from the position of Chief of Planning, Missouri River Division, U.S. Army Corps of Engineers. He had served nearly 35 years with the Corps in positions relating to water resources planning, policy formulation and engineering. Mr. Karabatsos has been involved in implementation of the Pick-Sloan Missouri Basin Plan since its adoption by Congress and has also served on the Missouri River Basin Commission and its predecessor, the Missouri Basin Inter-Agency Committee. With the latter, he chaired the Standing Committee on Comprehensive Basin Planning. Mr. Karabatsos holds a Bachelor of Science degree in Civil Engineering from Iowa State University and since retirement has been engaged in water resources consulting.

We must remember something else about the Pick Plan back in those days. In commenting on the report, the Federal Power Commission was less enthusiastic and gave only tentative approval because it said the project should be modified to maximize power generation at all the dams. I won't go through some of the other ones. The Bureau of the Budget (BOB) had comments that typified their comments of the '40's, '50's and '60's. As with all BOB reports, they never endorse anything The one thing they did do — they had no objections to submittal of the report but they said it did not conform with the President's program. That doesn't square with the facts of what FDR was talking about at the time. I don't know why this happens, it just happens. Dave Stockman hasn't been the only guy who is tough on the budgets.

You've heard before that the plans were coordinated through Senate Document 247. Let me point out that in the main stem of the Missouri, the big difference in the two plans was 10-1/4 million acre-feet more capacity in the Pick Plan over the Sloan Plan because USBR did not recommend Garrison or Gavins Point Dams. One word about the solution to basin administration. The Army did propose a commission similar to the Lower Mississippi Commission still in place today, which is in the Division Engineer's office in Vicksburg. That just didn't fly at all. Western water rightists Senators O'Mahoney, Millikin and — let me throw out another name that hasn't been mentioned — Wary of Nebraska opposed the commission. Wary was a states rights man first and foremost. He sided with the upper basin. Then, of course, Senator Murray started it all boiling by introducing MVA legislation which is what President Roosevelt wanted. But let me tell you something else. Interior Secretary Ickes liked an MVA but he wanted it placed in the Interior Department. So he was accused of being the next water czar. President Truman endorsed the previous stands but not with the same fervor as FDR. But we all know MVA was not created. There are many horror stories, war stories, and everything else. The one thing that did come out of all of this was the O'Mahoney-Millikin Amendment. It set up a priority for use of water. It put navigation in last position, getting only what was left over. We can go through all the niceties and all that, but that's basically what it amounts to.

One final word on the Pick-Sloan agreement of November. The issues were compromised, especially the navigation issue, by allowing the Bureau all the irrigation it proposed in the upper basin and granting the Corps of Engineers the nine-foot channel and all the flow regulation it wanted, with all future allocations of water to be made in terms of O'Mahoney-Millikin. But the compromise did not give any assurance that the navigation channel would ever be achieved nor that the waterway itself would be feasible upon completion, based on benefits generated.

I also would like to recall one other thing about Pick. In the early '30's when the captains and majors were running up and down the Missouri basin with '308' reports, they seriously questioned the development of hydro power because they considered it inimical to flood control and basically reservoirs would perform in a yo-yo fashion. In 1944, Pick said we can control the floods in the basin provided we impound all the water above Sioux City within the limits of practicability on the main stem and tributaries. Now they say we should construct multi-purpose projects, store water, make it work and use it for navigation, irrigation, power production, and flood control. Professor Maas of Harvard observed this came about because of the competition afforded by the Bureau. I say that makes pretty good reading from a collegiate viewpoint. I suggest Pick was a visionary and dealt in grand schemes and concepts. While the junior officers of the '30's played water engineer and probably were interested in taking the high ground, Pick devised strategies and frameworks that only sound planners and engineers that came in the post-World War II period can appreciate.

There were a number of players in all of this. Ed Weinberg has mentioned a few of them. I would like to recount those I consider to be the heavyweights. On the news media side, we had the St. Louis Post-Dispatch. They were on one side, and I think practically every other newspaper in the basin was against them. They were for MVA. They kept talking about one big river, one big plan. There was also the National Reclamation Association which was very active with upper basin interests. Then there was the Water Congress and the Mississippi Valley Association, which at that time was a navigation outfit, that were solidly behind Pick. Then there were a whole bunch of organizations that came under those heavyweights.

All Missouri basin states were involved, but Governor Sharpe of South Dakota was undoubtedly the leader of the pack and closely allied with Pick. I sometimes think they slept together. One thing Governor Sharpe did not do — he never surrendered the states rights position on water rights.

From a congressional standpoint, O'Mahoney, Millikin, Wary, and Murray were most active within the basin. In the Washington area, Mr. Weinberg has mentioned a few, but I will say the heavyweight was Will Wittington of the House Flood Control Committee. He was probably the most influential.

Finally, I wonder what might have happened if FDR had not died. Since all this took place, there have been a number of committees or commissions formed that have studied Pick-Sloan, even while it was under construction. They looked at the question and offered a whole bunch of criticisms. So let me start with the public commissions through '48. They said there were many unfinished tasks of an administrative nature, that a proper distribution of water between competing demands had to be made, and the disposition had to be made of proposed dams and cost allocations for use of electric power, land protection, forestry, and recreation. They seriously questioned the downstream navigation channel — that was in 1948. The St. Louis Post-Dispatch kept its harangue on the main stem plan, but this was sour grapes, merely rehashing the same disagreements during debate on the bills.

The sharpest criticisms came from the Hoover Commission. They included national interests not established, planning not done in proper order, administration lacked flexibilty, the plan was incomplete, accounting system not comprehensible, O'Mahoney-Millikin standing the constitutional test, and the plan did not maximize full power potential. I don't know where they got some of this because the plan is maximizing full power potential as much as it can.

The National Water Resources Policy Commission was more general in its criticism. They stated any possible water conflicts between navigation and irrigation were at least 30 years away. Well, that 30 years is up now, but there still isn't any great conflict between consumptive use and navigation today. Consumptive use and irrigation has not materialized to the level envisioned back in the '40's.

There was one other report at the time. The Engineers Joint Council was quite displeased with government engineering. There were special interest groups that wanted all engineering performed in the private sector. Then the Lawrence Survey Commission of 1953 presented a number of recommendations and they talked about greater local financial responsibility, beneficiaries of irrigation should be charged to extent of benefits, all power costs should recover interest, and the same for all other functions. They flat-out stated navigation should have lowest priority and questioned whether navigation should be continued as an objective of basin development. They also stated hydropower should be undertaken only in conjunction with balanced planning and regulation, that the preference customer clause in power should be retained, that all the dams should be completed, and that expansion of recreation should take place, but at the state level rather than the federal level.

I would like to close by saying a few words about Pick. He probably fits every description of him — soldier, engineer, politician, visionary, and one hell of a good salesman.

That's about all I have to say. I have some personal thoughts about today and the future, but I will not gratuitously offer those unless I am asked.

Mr. Robert B. Hipple, *South Dakota member of the Missouri River States Committee (1943-1967) and Publisher, Pierre Daily Capital Journal.*

When I was invited to appear here, I really did not know what would be expected of me. Accordingly, I did not prepare any formal remarks. But it occurred to me that it has been 40 years since we were organizing the Missouri River States Committee and 40 years since we were trying to promote development of the Missouri River. There were a lot of documents produced — most of them have been mentioned here today — but I assumed many of the people attending this conference simply would not be familiar with these documents and would not know what was in them. So I thought I would bring along a select few of them, and I am now glad I did. It gives me an opportunity to give you a few vignettes, a few random observations, based on the formal presentations that you have heard here today.

I want to begin by saying that Mr. Weinberg correctly observed that at the time the Flood Control Act of 1944 was enacted, it was common to refer to Section 9 of that Act as a shotgun marriage and the metaphor is accurate. Mr. Weinberg is absolutely correct in saying that the men who held that shotgun were Will Wittington, a congressman from Mississippi, and Senator Overton, a senator from Louisiana. And the shotgun they held was the possibility of enactment of a Missouri Valley Authority. For that matter, they had a second barrel and that was the enactment of a Rivers and Harbors Act which actually passed the House and which has been discussed here today as House Resolution 3961. But at that time, I didn't consider that a shotgun marriage, and neither did all the people who were engaged in attempting to bring about the ultimate result of adoption of the Flood Control Act of 1944. We preferred to think of it as a political miracle; and to this very day, with full realization of the achievements that we made, I still consider it a political miracle. I wasn't involved in the shotgun marriage, but I certainly was involved and was one of the disciples of Ted Sharpe and Judge Stone; and they were the men who achieved that miracle, in my book.

Now, what was the nature of this miracle? As has been described here, particularly by both formal speakers, it was the immense conflicts of interest that existed within the basin. You had navigation against irrigation. You had public power against private power. You had the railroads against navigation. And believe me, they were all outfits with political clout. Those controversies had to be resolved, and they weren't eliminated but they were suppressed. I am going to tell you a few instances of how they were suppressed. To begin with, at that time there were two potent organizations concerned with river development. One of them was the Misssissippi Valley Association which had been organized in 1919 to promote development of navigation on the inland waterways and the operation of the Federal Barge Company. Its headquarter was in St. Louis, its membership was composed almost entirely of the very top people — the presidents or their first executive assistants of the power companies who were shipping coal, of the steel companies, of big banks. People like Herman Pott, the President of the Grant City Steel Company. Fellows like Ralph Morgan, President of Catepillar Tractor Company. There were no second-string people in those annual conventions of the Mississippi Valley Association. I speak from personal knowledge because I served for two years as Chairman of the Resolutions Committee and for seven years as a member of the Executive Committee of that Association. And I hold a life membership today.

I want to start with a comment on the events of 1943, in a somewhat chronological order. I had known Glenn Sloan for several years because he had frequently been in my office. I had never met Lou Pick, although I had known some of his predecessors out of Omaha. But over the course of years, I think I developed the closest personal friendship with Lou Pick of any person in South Dakota and Gus, you talk about Sharpe sleeping with Pick. I literally slept with Pick, in the same bedroom with him.

It's been said there was conflict between the Bureau of Reclamation and the Corps of Engineers with respect to development of the river. That's true, there was. But early in the summer of 1943, after the flood, Governor Sharpe of South Dakota received a telephone call from Francis Case, a congressman from South Dakota, saying that he (Case) was arriving in Pierre that day and that he had invited the Missouri River Division Engineer from Omaha and a Glenn Sloan from Billings to meet with him in Pierre and he wanted to meet with Sharpe. Sharpe had another engagement that he could not cancel. He phoned me and asked if I would meet that Army officer that neither of us knew, tell him what the score was, and introduce him to Case and have lunch together. I said, "Sure." So I went up to the St. Charles Hotel in Pierre. I asked if this officer was registered, and they said, "Yes." I called his room. He came down and I introduced myself. Very shortly, within 15 minutes, while we were still talking, in walks Glenn Sloan. I introduced Glenn Sloan to Lou Pick, and the three of us stood there talking. I explained they were not going to have a chance to talk to Sharpe immediately but that they probably could later in the afternoon. I also said Francis Case would be showing up, and about 10 minutes later, Francis Case did show up. The four of us went into the dining room and had lunch together. Glenn Sloan was a minister's son, and he was a preacher, believe me. That conversation at that lunch table was dominated by Francis Case and Glenn Sloan. Lou Pick and I sat and listened. Glenn Sloan was preaching the use of Missouri River water for irrigation. We finally concluded lunch and Pick said, "Sloan, I am very much interested in what you are saying. I had to drive up here from Omaha and I am driving back there this afternoon to get back there tonight. Could you come along with me and we could talk on that trip?" And Sloan said, "Why, yes, I would be glad to." Those men left that afternoon after they visited with Governor Sharpe and Francis Case and they did drive back to Omaha together.

You have been hearing about Senate Document 475 that was the Pick Plan for the Missouri River. If anyone tells you Lou Pick was against irrigation in the Missouri

ROBERT B. HIPPLE
PUBLISHER, PIERRE, SOUTH DAKOTA
DAILY CAPITAL JOURNAL

Mr. Hipple served in the U.S. Army in World War I and returned to attend and graduate from Yale University in 1923. Following graduation, he joined the family publishing business. Mr. Hipple publicly advocated Missouri River basin development beginning in the 1930's. He suggested building Big Bend Dam on the Missouri River to increase electric power for the war effort and later recommended building Oahe Dam for irrigation and other purposes while the "Sloan" plan was being developed.

Mr. Hipple was appointed a member of the Missouri River States Committee in 1943 by South Dakota Governor M. Q. Sharpe. He attended and participated in most Committee meetings until it ceased meeting in 1967. He testified before Congress in 1952 in support of restoring funds to complete the construction of Oahe Dam and Reservoir. The effort was successful and Oahe Dam was closed in 1958.

River, I want to read you paragraph 49 of Lou Pick's document. He said,

> *In connection with the development of the multiple-purpose projects, those shown for the Missouri River will provide for the maximum practical storage of water of the main stem. The water to be impounded in these, as well as the other multiple-purpose structures shown in tables 1 and 2 will be utilized to produce the maximum practicable development of irrigation, navigation, power, and other multiple purposes. However, sufficient storage will be provided in each reservoir to provide for the needs of local flood protection downstream from the reservoir as well as for the needs of the general comprehensive plan for flood control for the Missouri River basin. To provide for the maximum utilization of the waters stored in multiple-purpose reservoirs, a plan would be worked out for each structure in collaboration with the various water-use agencies involved. The amount of water to be made available to the Bureau of Reclamation for irrigation would be arrived at after close collaboration with that agency. The development of power potentialities would be determined in cooperation with the Federal Power Commission. Water use for other purposes would be arrived at in a similar manner.*

The map attached to that report shows the location of the Garrison Reservoir and its shows the location of a canal leading out of the Garrison Reservoir to provide irrigation. I am just as convinced now as I was then that the reason that particular paragraph appeared in that Pick Plan was — remember it was submitted to Congress in 1943, long before the Sloan Plan ever appeared in formal form — because of that ride he and Glenn Sloan had from Pierre to Omaha in 1943.

I will skip the summer of 1943 and get back to this Mississippi Valley Association. The Mississippi Valley Association held its annual convention in October 1943. They had provided for three committees to present proposals to be submitted to the Congress in the form of resolutions. One of them was a Flood Control Committee that met on Sunday prior to the formal opening of the convention. Governor Sharpe was the Chairman of that committee. I sat in on that meeting; I was one of his disciples. The first conflict we had to deal with and the first miracle that had to be achieved was public power versus private power. You don't hear much about it today but then, believe me, it was violent. One of the men on that committee was a man named Frank Wilkes. Frank Wilkes was the President of the Southwest Power and Gas Distribution Co., a very large regional power distribution system with headquarters in Shreveport, Louisiana. He presented a proposed resolution that would have condemned public power in any form. I got up and objected. We did arrive at a resolution that was satisfactory to him and to me. And that resolution brought to a halt all controversy in subsequent meetings of the Mississippi Valley Association. It didn't stop them in Congress by a long ways, but it sure did in that Association. And it sure did, to some extent, among the power companies because they recognized that it was better to arrive at some kind of an armistice rather than continue the war.

At that same meeting, there was controversy over irrigation versus navigation. We had a Missouri River Caucus at which the subject was discussed, and the fellows from Montana, Wyoming, and North Dakota were concerned because the Mississippi Valley Association was not recognizing the need for irrigation. So I proposed a resolution — drafted it myself — which said, "We recognize the rights of the several states for beneficial use of water originating in those states for irrigation and domestic purposes and recommend that construction necessary to carry out those purposes be approved on the Missouri River and its tributaries." That resolution was adopted by the Mississippi Valley Association for the very first time. And that resolution again continued to be the policy for many years and it brought about a complete reversal of the antagonism that existed in the National Reclamation Association.

The National Reclamation Association held its annual meeting just about 10 days later in October and again, Sharpe and I went out there. We had a hell of a time getting there. We had to drive across the sandhills of Nebraska to North Platte and I had to call the president of the railroad in order to persuade them to stop a train at North Platte to let the Governor of South Dakota get aboard. The president of that railroad, the Union Pacific, did stop that train and we got on and Sharpe proceeded to start to write the speech he was to deliver that morning to the 12th Annual Meeting of the National Reclamation Association in Denver, Colorado. The proceedings of that meeting are contained in this book *(Proceedings of the National Food Conference and Annual Meeting of the National Reclamation Association,* October 1943) and anybody who is a serious student of the genesis of the Pick-Sloan Plan should include that book among his studies. I understand there are copies of it still available and this is 40 years later.

But, to illustrate the tremendous change that occurred as a result of the earlier meeting in St. Louis, the secretary reported on the resolution that we had adopted and the Association in its resolution proceeded to say that "WHEREAS, at the October 19, 1943 convention of the Mississippi Valley Association held at St. Louis, Missouri, the following resolutions were adopted by that Association unanimously . . . " and then went on to refer to the resolution I read to you that I had written in St. Louis. "NOW, THEREFORE, BE IT RESOLVED, THAT the National Reclamation Association appreciates the stand taken by the Mississippi Valley Association and its cooperation and support in securing the fullest possible economic benefit from the conservation and use of water of the Missouri River and its tributaries with a view of protection against devastating floods by reservoirs in the upper reaches of the river and the use of such water as released for irrigation and power in the arid and semi-arid reaches and resultant navigation." Here is the Bureau of Reclamation recommending resultant navigation in the lower reaches, as well as flood protection.

I told you that it was a political miracle. And it was because within the space of two weeks, we had quieted at least two, and actually three, of the controversies that existed in connection with the ultimate development of the Pick-Sloan Plan.

Pick once said, "Bob, you talk too much." So I am going to recognize I talk too much and quit now by simply saying this. I was very much interested at the business meeting this morning to hear the directors from Nebraska and Missouri suggest that something needed to be developed, that their governors were concerned they weren't making the progress now days that we made back in 1943 in our Missouri River States Committee. I fully agree that they are on the right track. But I would suggest to you, again based on experience, that the reason that the Missouri River States Committee was successful in 1943 and again in 1944 was because the governors of the Missouri River states personally attended the meetings of that committee, participated in the discussions and okayed the decisions.

The second thing I want to point out to you is this. That organization operated on a very limited budget. Each state did make a contribution but it operated on this basis. There were no formal bylaws, there was no incorporation. Robert's Rules of Order prevailed in recognizing people. It was recognized that the only basis upon which you can arrive at a decision was by the rule of unanimous consent. There were originally five — later eight and ultimately ten — governors. All of them attended, and most of them had two representatives — I was one from South Dakota — and any one of us had a vote and any one of us could veto any proposal that was made. There weren't very many vetoes, but believe me, there was a lot of discussion and ultimately through the genius of M. Q. Sharpe and Judge Clifford Stone, compromises were arrived at and decisions were promptly put into effect.

I have enjoyed this opportunity. Thank you very much.

Panel Moderator Vern Fahy:

At this time, the panel is at your disposal. We want you to ask questions of panel members or would entertain any comments from those in the audience.

I would like to lead off with a general question for the entire panel. In view of the importance of Indian water rights in today's climate and the overwhelming attention that seems to be paid to Indian water right claims in the West, do any of you find it strange that there was not some specific mention of Indian water rights in the Pick-Sloan Plan?

Ed Weinberg:

That observation, that fact — because it was a fact — there wasn't a great deal of attention paid to it — has to be viewed in the context of the mores and the philosophy of the time. Indian rights were not very high in the consciousness of the American people at that time. For example, the laws passed at that time commonly said that in case of an Army project or a Bureau project, if for the reservoir any reservation lands were needed, the lands would be designated by the Secretary of the Interior and that would automatically take the lands away from the Indians and the Indians were left to be compensated — and I quote — "as determined by the Secretary." Well, by the time they got around to Fort Randall Dam, the Indians were a little more conscious of what was going on and they made themselves known and they got a much greater degree of compensation for their lands than they would otherwise.

On the subject of water rights, the facts of life are that the Indian water rights are there. And another fact of life is that nobody is going to get an act of Congress through that says they don't exist or takes them away. Indian water rights are a real factor and you may as well realize that you are going to have to negotiate with the Indians and come to an agreement. I won't say "deal" because deal indicates something underhanded, sneaky. You are going to have to make a contract, an agreement, with the Indians by which their rights are recognized and at their option, they either participate in the project to develop those rights or at their option, they will make their water rights available. Anyone who thinks there is no such thing as Indian water rights, or that this is a myth or figment of someone's imagination, is kidding themselves. These things exist. These people are American citizens too. It is their property just as much as your house, if you own one, is your property. Unfortunately, there is quite a bit of emotion entwined in this. There is, let's face it, a feeling on the part of the Indians that they got the short end of the stick for a long time and now somebody is going to have to pay for that. There is that feeling and you're just going to have to live with it and try to work it out. Nobody is going to take those rights away from them. The Secretary of the Interior knows that because after all the talk going on in Washington to the effect he is going to do something about Indian water rights, what he is going to do depends on if the Indians are willing to try to work something out.

Robert Hipple:

I would like to expand on that a little bit. Why didn't we talk about it 40 years ago? The Indian rights existed at that time by virtue of a Supreme Court decision in a case involving a Montana reservation on the Milk River, in a case known today as the Winters Doctrine. The Court in essence said the water went with the land and the right to use it to the extent that they can make beneficial use of it. That's the extent of the Indian water rights. They can use it to the extent that they can benefit from it.

Now, why didn't we address that question 40 years ago? In Montana, the bulk of the irrigation was on the Yellowstone River, which does not have an Indian reservation on it. On the Milk River, the question had been decided. So, in Montana there was no problem. Coming downstream to North Dakota and South Dakota, there was no irrigation and no Indian even thought that he could, and for that matter, neither did any white man. There wasn't an irrigation project in the whole length of the Missouri River in the two Dakotas. One reason was that the cost of raising the water was just too high and the fluctuating level of the river in floods and droughts made it impractical. As a result, there wasn't any irrigation. Now, South Dakota has the largest amount of Indian lands of any state except Arizona, and we've got four reservations that exist on the river. So the problem actually boiled down to South Dakota. But 40 years ago in South Dakota there was no Indian and no Indian tribe that wanted to make beneficial use of Missouri River water. As a result, the Winters Doctrine was moot in South Dakota.

Question: (Jack Odgaard)

Vern, perhaps this will be answered tomorrow. I think we would be remiss if we didn't have those like Gus Karabatsos, Bob Hipple and Paul Harley answer this — people who worked with it — give us their opinion about where Pick-Sloan goes from here. Specifically, we've got a lot of rhetoric, similar controversies to what probably existed 40 years ago, among some of the governors and some of the states. It seems to me that the main stem river has been pretty much developed. We have a considerable amount of hydro and we may be able to expand on that. We've got navigation and we've pretty much completed the main stem flood control projects. Now, where do we go from there? Are we done with Pick-Sloan? Can it continue? Because we're hearing that some eastern congressmen want to terminate it because they don't like irrigation development.

Vern Fahy:

Jack, you were right in your opening assumption. We will be addressing that. However, I don't think it should be ignored at this time, and I think this might fit under the heading of "gratuitous remarks." Gus.

Gus Karabatsos:

I knew we would get around to the gratuities. The question really deals with more than the main stem. It deals with the entire Missouri River basin. Let's face reality. In 1944 and 1943, the interest rates on which the price of money and the economic feasibility of projects was measured against at that time was 2-1/2 percent and today it's up there maybe 8 or 9 percent. A lot of difference in the cost of money itself, so the feasibility problem is different.

There were no environmental laws in 1943-44. Now, for better or for worse, you've got to go through agony — Tolstoy's *War and Peace* — with an environmental impact statement. How would you like to write an environmental impact statement on the six main stem dams? You'd have a grey beard and they would put you in the grave before you'd be done with the thing. Believe me.

So those are the important factors with respect to adding projects. That's the preamble. But here are a few things that come into my mind with respect to the issues that face this basin. If we will just accept the fact that Pick and Sloan furnished the platform on which to build. Recognize that what was proposed in 1943 and 1944 was flexible, that there are changing uses, priorities of uses, etc. Only those who follow have a problem because they don't recognize what must be done or have the courage to work within a framework already established. In other words, you've got it here in the Pick-Sloan — you've got legislation, the 1944 Act. Now along comes a company like ETSI. South Dakota says, "I'm going to give them 50,000 acre-feet." The basin immediately goes back to '43, it splits down the middle, and what do I hear? What I read in the paper — they say "We have a problem. Let's put together a compact. That's going to solve our problem." Personally I think a compact is about the most inflexible way I know of to administer the apportionment of water with the chances of success being as close to zero as anyone can get.

I would also venture a prediction that everyone in this room will probably be dead before a draft compact could be achieved. You can believe that or not, I don't care. I'm not going to be around.

But there are a few things that need to be done, and I think some of them have been done. You need a fairly good hydrologic evaluation system so that all the water proposal impacts can be evaluated. I don't know where the Missouri River Basin Hydrology Study is or what its success ratios are and so forth. But something like that is needed so every time you come up with a proposal you can immediately, with our high speed technology, say this is what happens if you do that. There has to be an acceptance of water use priorities as set forth by O'Mahoney-Millikin. If it's not acceptable, then I would suggest that the 1944 Act be repealed and a new set of water priorities established. In other words, you take it right up to the congressional level. I believe a definitive, up-to-date, sound cost allocation needs to be made with respect to the main stem system.

What was the money spent for? What's it supporting? Right now, the cost allocations are only to four functions. Navigation, irrigation, flood control, and power. What about fish and wildlife? What about pollution? What about municipal and industrial water supply? Anything you can think of. Why aren't those evaluated in your accounting system?

I believe the future fate of the navigation project which underpins all of this should be closely monitored through sound economic evaluations. I'm not saying to scrap it. But I think you should take a look at this thing and keep monitoring it to see what is happening with respect to the main stem and how much of the benefits and more importantly, the costs, of navigation are buried in the main stem dams rather than in the project downstream.

I think that some kind of a regional entity is required to effect as much coordination as possible between the federal agencies and the states and among the states. I'm not talking about a compact, but you need some kind of a regional entity. And you have one now in this Missouri Basin States Association, but I think that falls short because it's just the states. You should have the entire water community together.

I believe a more professional and stable outlook on water resources rather than emotionalism and the political rancor of downstream-upstream fights should take place in this basin because I assure you, no one will win when it comes to the upstream-downstream water fight. Those are some of my thoughts on this. I think Pick-Sloan is a foundation that should be built around and worked legislatively through Pick-Sloan itself, but I think we ought to get away from the emotionalism, the flag waving, and the bloody noses because no one will win at that game.

You know, regarding the projects of the Pick-Sloan Plan — I'm sure you will hear about this tomorrow — there haven't been many of them built. Very few. You're just lucky you got the main stem system, which is the bulk of it. And it is a great system. End of gratuitous remarks.

Ed Weinberg:

I would like to make a brief statement as my answer to the question of what's going to happen and are we going to realize the completion of Pick-Sloan. As Gus pointed out, most of the irrigation isn't built. I don't know what the answer is. I think the answer will be found in two ways. One is it depends on the hydrologic cycle. A drought of the kind we had in the '30's hasn't been experienced for a long time up here. The eastern part of the Missouri basin is in the border zone between what used to be called the Great American Desert and the humid states and when you look down the 97th or 98th meridian, and it runs all the way down into west Texas, you have cycles. It isn't a constant drought and it isn't a constant period of humidity. But over time, the drought always comes back and you've got to have that water for long-time stability. One of the problems is we have had a wet cycle for a long time. People have forgotten what these irrigation developments were supposed to do. In the short run, you're getting along without them.

The other factor that I think is going to determine what happens is whether the country is going to continue in the mood that has prevailed since the beginning of the '70's. The country's mood is that there is something improper about the Federal Government engaging in resource development. As long as that mood persists and the leaders and molders of public opinion in this part of the country are content not to challenge what I think is a myth, you're not going to get any large-scale money or reauthorizations. It's as simple as that. For 15 years there has been this myth that the Federal Government has no role in these things. Well, I don't shrink from my support of the federal agencies working with the states. You tell me what state could build Garrison Dam, what state could build Oahe Dam and what state would build Gavins Point? And what state is going to build an irrigation development like the Garrison Diversion project? It can't be done financially. That's why we have a Federal Government. That's what it is for — to handle problems that cannot be handled by the individual states. But until and unless the public mood changes and once again recognizes that, the federal agencies are going to be in a holding pattern, running around and in effect, making studies that will take their place on the shelf because nobody is listening to them.

I think Gus feels the same way. I don't apologize for working for the Federal Government for all those years. As a matter of fact, if Hubert Humphrey had made it to the Presidency in the election of 1968, I know I would not have left the government. To me, it was a career and a labor of love. The word "dam" in my book didn't have an "n" in it. But today, anyone who suggests a project of this nature is immediately looked upon as a despoiler of the environment. This comes particularly hard to one who occupied a high position in the Interior Department when the environmental movement was reborn. Talk about born again. The environmental movement was reborn in the '60's, and Stewart Udall was one of the people who gave it revitalization. Those of us who occupied positions as close advisors at that time and movers and shakers in the departments shared with Stewart Udall a deep conviction in not raping the environment but also a deep conviction in maximizing the use of the Nation's resources within a sound environmental framework for the betterment of the Nation as a whole. I say that as a member of the National Wildlife Federation, the Friends of the Earth, etc. But what's lacking is balance. The pendulum has swung and if it doesn't swing back we will be stymied. You are the people who have to make it swing.

Robert Hipple:

The question, as I remember, is what is going to happen? What do we do now? The one thing of which I am sure is that the Missouri River will continue to flow from the mountains to the sea. The question is what are the people who live along that river going to do with the water? What use, if any, are they going to make of it?

In 1940, the United States had a truly wonderful system of railroads for transporting freight and passengers. Today passenger trains have virtually disappeared. In my own State of South Dakota, we had two major railroads, the Milwaukee and the Northwestern. The Milwaukee has gone bankrupt. The State of South Dakota bought its tracks in South Dakota. It's made a contract with the Burlington Railroad to operate a part of it. The rest is simply standing idle. The Northwestern Railroad has a line that starts at the eastern border and goes right straight across the state through my town of Pierre. The Northwestern Railroad has already given notice of its intention to abandon its tracks from Pierre through the Black Hills. In other words, in the entire western half of South Dakota, which is larger than a great many states, there would be no rail transportation. I think our legislature will do something about that; but looking at the long term, I am convinced there is going to be a revival in this Nation of the original transportation that the 13 colonies had and that George Washington did some surveying for. The fact remains today that water transportation is the least expensive method of moving bulk commodities from one place to another and the problems, both political and financial, involved are tremendous. We aren't talking about a few millions; we're talking about billions when we talk about building locks around those dams. Believe me, there is interest, and it exists in Montana. They couldn't have cared less about navigation in 1940. Today people in Montana are irrigating the Yellowstone Valley, and the wheat producers in the northwest corner of Montana are wishing they could ship their commodities downstream on the Missouri River.

The same thing is true in North Dakota where there are simply enormous coal reserves. Talk about ETSI. ETSI is peanuts. I wish everyone here could realize that the volume of water that's concerned there is trivial. It's nothing. It's something you couldn't even measure on a gauge. Des Moines is using more water for air conditioning today than the daily ETSI consumption would be from the Missouri.

I'm for nuclear generation. I think it's all nonsense to oppose nuclear generation, but I realize there are a lot of people who don't agree with me. The alternative, in my view, is going to be coal. And that coal is going to have to move to the point of consumption. And it's either going to have to move in pipelines that cost billions or it could move as it has been moving for hundreds of years — for a long time, at least — in West Virginia, Pennsylvania, and New York. There is no reason why there shouldn't be millions of tons of low sulphur coal moved out of North Dakota every year. I think that what's going to happen is a revival of navigation.

But I will close again, Vern, by saying this. If the people of this basin want to make beneficial use of Missouri River water, they have to insist upon their governors participating and they are going to have to find some governor comparable to M. Q. Sharpe and some very sharp water lawyer — Ed Weinberg is one — to tell them how to get it done.

Paul Harley:

I would just like to say one thing. We keep talking about what the Pick-Sloan Plan hasn't done for the basin. I think we should reflect also on the things it has accomplished because it has accomplished many things already. I feel the policies and overall goals and objectives are just about as sound today as they were when we originated that. I think any time we are tempted to get lost on a small issue, even though that's the one that creates great emotions, that we should always return to our basics. Not that they will always be completely adequate, but I think we don't want to loosen the anchor to those until we are sure we have sound reasons for changing.

I would also like to second what has been said — I'm here speaking not only to what happened when people became aroused on issues and united to come up with answers as they did in '43 and '44, with the governors being there in person and knowing the trends of things, the problems and the alternatives. Every governor in those states was present at those meetings, or he had an able lieutenant there. Most often, they were there themselves. And those meetings included from 70 to 100 people who were there not to do anything except to know what was going on, to fully understand the issues and the alternatives, and to assist in working it out.

That brings me to one more point. It was people like Judge Stone and Governor Sharpe who rose to the occasion and were able to provide the top leadership that found solutions in what seemed to be an unsolvable problem. I heard a discussion the other day on TV by a very old lady in the Navy Department who had been called back to service even though she was in her 70's. She was really talking about the use of machines to do our work, but one of the things she focused on was in recent years we have tended to worry more about management than we have about leadership and it takes leadership to bring us through these problems and find the solutions.

THE PICK-SLOAN MISSOURI BASIN PLAN

Opening Remarks
August 11, 1983

Moderator: Mr. Bill Crews

Good morning, and welcome back to our Pick-Sloan Conference. This morning we are going to proceed from the birth of the Pick-Sloan Missouri Basin Plan through its youth to age 39, which most would call its middle age. We have asked the descendants of Gen. Pick and Mr. Sloan to describe the original Pick-Sloan Missouri Basin Plan and tell us what has been accomplished and then discuss what remains to be done. They have elected to make their presentation in four parts. They will lead off with a pictorial description of the basin and some interesting basin facts and history leading up to the Flood Control Act of 1944. Harry Dolphin and Diane Noennig will narrate that portion of the presentation. They will be followed by General Sisinyak, Joe Marcotte and Gordon Wendler, who is substituting for Bill Martin. I will introduce Diane and Harry now and the others when it is their turn to speak.

Editor's Note: Harry Dolphin, Chief of the Public Affairs Office, Missouri River Division, Corps of Engineers, in Omaha, Nebraska, and Diane Noennig, Public Affairs Specialist for the Upper Missouri Region of the U. S. Bureau of Reclamation in Billings, Montana, narrated a photographic slide show which provided an excellent introduction to the Missouri River basin, emphasizing the basin's water resource, its problems and its development. The presentation could not be reproduced here but may be made available by contacting either Harry or Diane.

Description of the Original Pick-Sloan Missouri Basin Plan Accomplishments to Date and Remaining Projects and Programs

Brigadier General Mark J. Sisinyak, *Commander and Division Engineer, Missouri River Division, U.S. Army Corps of Engineers, Omaha, Nebraska.*

Good morning, ladies and gentlemen.

My two years behind Lewis Pick's desk really climaxed during this past two days. And you know, I've decided we really have something here.

From the very first, I've heard the Pick-Sloan Plan referred to as "The Shotgun Wedding." The descriptive term was immortalized in a lengthy article in the old Saturday Evening Post.

But, I'll let you in on a little secret: If all shotgun weddings were as successful as this one, Remington could devote an entire production line to twelve gauges in dress white.

For you history buffs, this year we celebrate two anniversaries tied into that wedding. In December the Pick-Sloan Plan reaches the Jack Benny mark. The Flood Control Act of 1944, of which Pick-Sloan was a part, will be 39 years old. We will commemorate a true landmark in government history, a celebration of cooperation among no less than 10 states and a number of concerned federal agencies, most notably my own Army Corps of Engineers and our good friends with the Bureau of Reclamation.

The second birthday we observe will be Number Five-Oh — the golden anniversary of the beginning of

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Editor's Note: Photographic slides were shown during this presentation to emphasize points in the narrative.

Fort Peck Dam. As you know, this monumental Corps project was incorporated — after construction — into the Pick-Sloan Plan.

As Diane and Harry noted, flood control and multipurpose water use in the Missouri basin became the focus of attention in the years immediately before and during World War II. It was the result of an unprecedented drought followed almost immediately by floods of historic proportions.

In answer to a congressional mandate in 1939, Glenn Sloan developed a plan to assure water for the basin, despite the vagaries of Nature . . . A hedge against "too little." Then in 1943, following three major spring floods in the basin, Lewis A. Pick, a predecessor of mine, developed a plan to minimize such tragedies . . . Insurance against "too much."

When, again at the direction of Congress, the two plans were merged, we had a concise program to control the Missouri River.

The initial purpose of the recently wedded Sloan Plan and Pick Plan was four-fold:

1) Control flooding;
2) Irrigate farmland;
3) Produce hydroelectric power; and,
4) Improve navigation on the Missouri.

From the very beginning, the basin benefited in other ways. These included improved municipal and industrial water supplies, added public recreational facilities, conservation of fish and wildlife, and better control of soil erosion and water quality.

With this broad spectrum of benefits, of course, implementing the plan required a variety of projects — dams and reservoirs, levee systems, irrigation projects, channel stabilization work . . . You name it.

Make no mistake, Pick-Sloan is a vision of massive proportions, one of the most far-seeing efforts of its kind in recorded history. The Corps of Engineers is proud to be part of Pick-Sloan.

Without exception, the men and women of the Missouri River Division feel a very personal pride in this giant undertaking because ours is the Corps division involved in Pick-Sloan.

And we are flattered because our work includes the "Gee-Whiz" part of the plan — the six huge dams on the main stem. The main stem projects, as most of you know, are operated by our Omaha District, the district which built three long levees on the Missouri as part of the plan as originally envisioned.

Because it is vital to the success of Pick-Sloan, permit me to review some details of this keystone of the plan — the main stem system.

Even though it later became an integral part of the total plan, workers who began clearing brush for Fort Peck in October 1933 had never heard of Lewis Pick.

The avowed purpose of Fort Peck was to help control flooding and to improve navigation on the Missouri from Sioux City to the mouth near St. Louis. But the overriding reason was to employ people, to "make work."

Begun as a WPA project, following plans by the Corps, control was soon turned over to the Corps and the project grew under direction of the Fort Peck District. It was a construction effort, the likes of which we may never see again.

When construction began there was no town of more than three thousand population within a hundred miles of the remote site in eastern Montana. Yet, within two years, more than ten thousand were employed by the Corps and — as one old-timer told me — "another ten thousand were there, living off the first ten thousand." They came from every section of the country — by jalopy, by hoboing, by thumbing, by walking — any way to any place to find work in the Great Depression.

They lived in the government-built town of Fort Peck or in one of 17 boomtowns which sprung up in the area. And, they did some kind of job.

By 1943 when water first rushed past the turbines, these men and women could be proud of building the largest hydraulically earth-filled dam the world will ever see — an embankment four miles long and 250 feet high.

The original authorization was modified by the Pick-Sloan Plan to provide for substantial releases for irrigation as soon as substitute storage was provided by

BRIGADIER GENERAL MARK J. SISINYAK
U.S. ARMY

General Sisinyak assumed his present assignment as Commander and Division Engineer, Missouri River Division, U.S. Army Corps of Engineers in August 1981. In his present position, he is responsible for military construction in 10 midwestern states and for emergency assistance and water resource work throughout the Missouri River basin. General Sisinyak has served in various engineer troop staff and command positions in the United States, Korea and Vietnam. He has also served as an exchange instructor at the Royal Australian School of Military Engineering, and as Commander, 1st Regiment, U.S. Corps of Cadets, West Point. General Sisinyak is a graduate of the U.S. Military Academy, the U.S. Army Command and General Staff College, and the Industrial College of the Armed Forces. He also holds a Masters degree in Civil Engineering from Princeton University.

the downstream reservoirs. The service to navigation was shifted to the downstream reservoirs as well.

As a footnote, the concept then was to irrigate large areas in North Dakota from Fort Peck through the Souris project, a Bureau of Reclamation concept which was part of the Sloan Plan.

To insure efficient operation of this multi-purpose project today, we have the Fort Peck Inter-Agency Council. This organization includes federal, state and local governmental agencies. They meet twice yearly to coordinate mutual activities and to resolve problems concerning fish and wildlife, camping facilities, access roads, sanitation and other matters concerning public use.

Moving to the other end of the system, we have Gavins Point Dam on the South Dakota-Nebraska border near Yankton. Although the smallest of the giants, it is vital to success of the system.

We began Gavins Point in 1952 and completed the project in 1964. Its major reason for existing is to smooth out the intermittent surges of water released upstream at Fort Randall during periods of peak power production.

In effect, Gavins stores and reuses releases from Fort Randall to produce additional hydropower, minimize bank erosion and provide better control of downstream releases. The result is stabilized banks and enhanced levels for navigation.

Gavins Point was part of the original Pick Plan but was not envisioned in the Sloan concept.

Closure was made at Fort Randall in 1953, seven years after construction began. Incidentally, this dam was part of both the original Sloan Plan and the Pick Plan. The dam is six miles south of Lake Andes in South Dakota. Like each of the six main stem projects, it produces hydroelectric power. Randall has eight tunnels for power and four for flood control.

We began Big Bend in 1959. The project, 21 miles upstream from Chamberlain, South Dakota, is primarily for power generation. It operates to meet peak load demands. The first two of eight power units went on line in 1964, and the final unit began operation in July 1966.

The largest power plant in the system is at Oahe, six miles northwest of the South Dakota state capital at Pierre. This plant has an installed capacity of 595-thousand kilowatts.

As a matter of historical interest — and for you figure filberts — that exceeds the total capacity for the entire system as envisioned in the Flood Control Act of 1944. The original concept was for a system total of between 400 and 500 megawatts. Today the main stem has an actual installed total of 2100 megawatts.

But back to Oahe: by mid-1963 all seven units at the powerhouse were on-line, and current figures show that the project has produced approximately 60 billion kilowatt hours of electrical energy. That's a lot of power generated without importing foreign petroleum.

Oahe not only has the largest power potential, at 23½ million acre-feet, it is second in storage only to Garrison which has a capacity of 24.1 million acre-feet.

That's enough water to cover this entire State of Iowa to a depth of almost eight inches.

In years of normal runoff from snowmelt and rain, the Oahe pool level varies about seven feet. And if we had a return to the disastrous conditions of the Dirty Thirties, lake storage could be drawn down 70 feet.

Oahe was in both the Sloan and Pick Plans. However, Pick also had an Oak Creek reservoir scheduled near Mobridge. The ultimate plan combined these two into the single large reservoir now known as Oahe.

To complete our set of a half dozen main stem projects, Garrison Dam rose on the Missouri 75 miles upstream from North Dakota's capital, Bismarck. It was built by the now extinct Garrison District. The compacted earth embankment extends more than two miles across the river. Garrison has an installed capacity of 430-thousand kilowatts and can produce more than 2 billion kilowatt hours of electrical energy each year.

At this date few persons realize that the Garrison Diversion was a Corps of Engineers concept. Corps and Bureau plans were not identical in this respect, although Pick and Sloan did develop some common areas for irrigation.

Levees were a vital part of Pick-Sloan because of the absolute necessity for alleviating damage from flooding.

Our Omaha District built three major levee projects under Pick-Sloan in eastern Nebraska and Western Iowa.

Work on two of these was completed in 1954 — one in Omaha and the second in Council Bluffs — rushed into construction, no doubt, by the killer flood of 1952 on the Missouri.

As an aside and an interesting footnote, Fort Peck was the only one of the main stem dams in operation at the time of the flood. Although eleven hundred miles upstream from Omaha, this single large dam shaved an entire foot off the crest in the Omaha-Council Bluffs reach. If all six dams had been operational, $179 million in flood damages would have been prevented.

But we're talking about levees. Twelve miles of levees were built on the Omaha side of the river and 14 miles completed on the Iowa side. In addition to the levees, five thousand feet of floodwalls were built as part of the Omaha project. Fourteen pumping plants on the right bank and four on the left bank of the river were installed as part of the projects.

Total combined cost of the two projects was almost $9 million.

The third such project authorized by the 1944 plan provides a series of levee units and appurtenant works from Sioux City to Rulo, Nebraska. These were to be along both banks and were to protect farmland and small communities. Construction of the active portion of the project is 54 percent complete with 14 units built.

Remaining uncompleted units between Sioux City and Omaha are classified "inactive," the result of need and feasibility studies.

Total cost of the active program is $40 million.

Those Pick-Sloan projects built by our Kansas City District — in the lower basin, if you will — became known in-house as the "southern hinge." The plan included projects for the tributaries of the lower and mid-Missouri River, the Kansas River and one reservoir slated for the Arikaree River in eastern Colorado and northwest Kansas.

All units were authorized initially in the Flood Control Act of 1938 — or earlier — but were incorporated into the Flood Control Act of 1944.

Incidentally, that single project on the Arikaree — Pioneer Reservoir — was deauthorized by Congress in 1977. That deauthorization included others in the Pick-Sloan Plan, including two on the Gasconade in east central Missouri. Several projects on the Grand River system in north central Missouri have been deauthorized as well.

Two reservoirs in the original Pick-Sloan Plan were completed in 1962 — Tuttle Creek near Manhattan, Kansas, and Pomme de Terre near Hermitage, Missouri. The latter project was the first Corps flood control reservoir built in Missouri.

Reservoirs have been completed by our Kansas City District in Missouri, Kansas and Nebraska. The Nebraska project is Harlan County on the Republican River near Alma.

A tributary of the Kansas River, the Republican is further harnessed by Milford Reservoir near Junction City, Kansas. Other Kansas projects built by the Corps are Kanopolis at Ellsworth, Wilson near Wilson, Tuttle Creek, Perry Lake at Perry and Clinton near Lawrence.

Three Kansas reservoirs are part of the Osage/Marais de Cygnes River basin system that empties into the lower Missouri. These are Melvern, Pomona and Hillsdale.

Of course, as the Marais de Cygnes crosses the state line into Missouri it becomes the Osage River where the key project is the Harry S. Truman Dam at Warsaw. Stockton and Pomme de Terre are part of the Osage system.

Lawrence, Manhattan, Osawatomie, Ottawa, Salina and Topeka are among the cities protected by levees and appurtenant structures.

Active units of the Missouri River system within our K.C. District include 260 miles of main stem and tie-back levees. These are located from Rulo to Brunswick, Missouri, to protect fertile bottomland.

The levees vary from simple embankments to elaborate systems which include pumping plants to draw off interior runoff.

Yet another project, this one to protect Riverside, received support at a public meeting last December as part of the feasibility study. Also under review for feasibility are levees in the Napoleon-Missouri City areas, the Lexington area and the Carrollton area.

The report card for Pick-Sloan in our Kansas City District is good. Through Fiscal Year 82, these projects have prevented flood damages in excess of $809 million. And the star of the district is Tuttle Creek Dam near Manhattan which has a spectacular record — almost $305 million in flood damages prevented during its 20-year history.

And, the report card for the operation basinwide is equally impressive. As just one element, we have referred several times to navigation. You heard this morning that commercial navigation in the heyday of the fabled paddlewheelers occasionally hit 50-thousand tons a year.

To update that figure a bit — the year that Pick-Sloan was unveiled as part of the Flood Control Act of 1944, commercial shippers moved less than 242-thousand tons. Now, compare that with the past five years when commercial totals varied between 2½- and 3¼-million tons. Not bad. Of course, as with all things, we are convinced it could be better.

As another of my many footnotes, I'll remind you that the current channel dimensions — 9-foot depth

by 300 feet wide — were outlined in the River and Harbor Act of 1945, not as part of the Flood Control Act of 1944.

Returning briefly to the main stem system and the three major levee projects originally authorized, again we are convinced the Nation received a bargain. Perhaps one of the best bargains since Thomas Jefferson shelled out 15 million bucks for the Louisiana Territory. Incidentally, we'll commemorate the 180th anniversary of that little real estate transaction in two months (Oct. 21).

American taxpayers have invested a total of less than $1.2 billion in the Big Six.

Through this past calendar year, they have generated approximately 248 billion kilowatt hours of electrical energy which has sold for more than the total cost of the six projects, something on the order of $1.2 billion.

In addition to the incalculable toll in human suffering prevented, the main stem projects have reduced flood damages by more than $1.6 billion throughout our basin. Total flood damages prevented by the full gamut of Pick-Sloan projects exceed $5½ billion through calendar year 1982.

In the first quarter-century since construction began on the Omaha-Council Bluffs levees, they have reduced damages in the two cities by $207 million.

Speaking of flood damages prevented, I would be remiss if I failed to commend our partners from the Bureau of Reclamation. Their instant cooperation in this difficult job is a model for all federal agencies.

As we mentioned, the 1944 Flood Control Act assigned us responsibility for regulating storage capacities allocated to flood control at reservoirs built wholly or in part with federal funds. The act further provides that the Corps is responsible for determining flood control capacities in all reservoirs included in the comprehensive plan for the Missouri basin.

So, we turn to the Bureau. Normally, a phone call and the job is done, and a complex job it is. But Bureau project folks always come through —

At Tiber, Clark Canyon and Canyon Ferry in Montana; at Heart Butte and Jamestown in North Dakota; at Shadehill and Pactola in South Dakota; at Enders, Swanson Lake, Butler Lake and Harry L. Strunk in Nebraska; at Keyhole, Boysen and Glendo in Wyoming, and at Bonny in Colorado. So — Bill (Martin) and Joe (Marcotte), please pass along our thanks and respect to those pros of yours in the field.

In summary, it's difficult to get a firm grip on all details of the original Pick-Sloan Plan. More than 90 dams were in that plan. Of these, 13 tributary reservoirs and four main stem projects were to have hydroelectric generating capability for a total of only 400 to 500 megawatts capacity. Today, we have installed capacity of 2100 megawatts.

Several hundred localities were slated for some form of irrigation aid; eight levee projects were destined for five stretches of the river below Sioux City; and —

The 1944 Act authorized the Bureau and the Corps to conduct additional studies and begin construction within the limits of an initial appropriation to each agency of $200 million. Each of us had broad latitude in determining priorities.

And, we have accomplished much . . . because we — all of us — have cooperated.

Of the originally proposed reservoirs, 39 have been completed, including the main stem projects; three have been deauthorized; 12 still are considered to have potential for future development. Twenty-one of the original projects proved to be physically infeasible and five have been superseded by alternatives, and 17 are "inactive" because they fail current criteria for economic feasibility.

But what's down the road as part of Pick-Sloan?

. . . Added hydropower is a very real possibility. And the Gregory County site on Lake Francis Case in South Dakota is the place.

The Chief of Engineers has blessed our report — and forwarded it to the Secretary of the Army — recommending that construction of the project be authorized. This pumped storage operation would provide 2,360 megawatts capacity — more than doubling capacity of the total system as it is operated today.

Furthermore, we have studied the main stem plants and concluded that several can be upgraded. Capacity at Garrison Dam in North Dakota can be increased by 272 megawatts; Fort Peck in Montana by 185 megawatts; and, Gavins Point in South Dakota can be upgraded by 20 megawatts.

So, with these additions and modifications, main stem capacity would increase dramatically from 2100 megawatts to 4,937 megawatts. That's a lot of electrical energy, but that is an essential ingredient if this basin is to fulfill its promise for a bright future.

Were they here today, I am certain that Glenn Sloan and Lewis Pick would be smiling despite their dour reputations. Their dreams for this valley have become a smashing success. A success not only in flood damages prevented nor in energy produced; not only in the water made available to farms and industries and cities; not only in the commercial highway that is the Missouri, but also in the playground provided for our citizens.

Last year in the Missouri valley, Corps and Bureau projects hosted close to 40 million visitor-days-of-use . . . not bad for a basin with only nine million residents.

Cooperation has been the key. We have worked together. But, much still remains to be done. Now, let me make a promise to you: If we continue to cooperate — one agency with the others, one state with the others, one individual with the others — you can bet your life . . . and your livelihood . . . WE'LL GET IT DONE!

Mr. Joseph B. Marcotte, Jr., *Regional Director, Upper Missouri Region, U.S. Bureau of Reclamation, Billings, Montana.*

It pleases me that the Missouri Basin States Association has chosen to put together this conference. The need to understand why and how the Pick-Sloan Missouri Basin Program came to be is important to all of us who live in the basin. It is also very important for us to know what has been accomplished thus far under Pick-Sloan. But most critical of all is the need to create a dialogue among those who will be making decisions regarding use and management of the water that flows through the basin.

Yesterday's discussion described the birthing period — the need to protect the downstream states from the loss of life and property which resulted from continual flooding; the need to provide life-giving water to the drought-plagued upstream states; and the need to create energy which would be distributed throughout the entire basin. This morning you are hearing reports from the various federal agencies with responsibilities for managing the multiple-purpose benefits which are a part of the Pick-Sloan Missouri Basin Program.

Let's take a few minutes to examine what has occurred in the Upper Missouri Region since passage of the 1944 Flood Control Act.

The amount of hydropower that has been developed far exceeds that which was originally envisioned. While the Bureau has constructed only 60 percent of the hydropower it had originally planned, the Corps has developed 452 percent of its original assignment. The net result is that hydropower plants within the basin are producing 214 percent of the energy planned during the conceptual phases of the Pick-Sloan program.

We can be thankful that this progress has been made. These federal power plants go a long way in helping to meet the energy needs of an ever-growing part of the United States by providing a clean, efficient, and renewable source of energy.

That power has been sold mostly to preference customers — municipalities, institutions, and rural electric cooperatives to bring electricity to rural areas throughout the basin. Since power first came from Fort Peck power plant in 1943, $1.8 billion have gone into the federal treasury.

Let's examine the power sales in the Pick-Sloan Eastern Division which are administered by the Western Area Power Administration's Billings, Montana, area office. That power is distributed to seven states, and in

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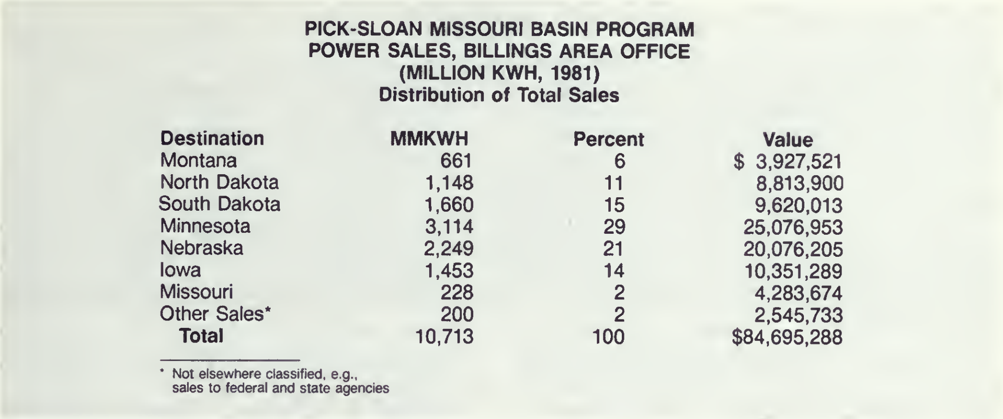
Editor's Note: Photographic slides of maps used in this presentation are not reproduced here.

1981 its value amounted to about $85 million. Here we can see how the energy is distributed within each state.



PICK-SLOAN MISSOURI BASIN PROGRAM POWER SALES, BILLINGS AREA OFFICE (MILLION KWH, 1981)

Distribution of Total Sales

Destination	MMKWH	Percent	Value
Montana	661	6	$ 3,927,521
North Dakota	1,148	11	8,813,900
South Dakota	1,660	15	9,620,013
Minnesota	3,114	29	25,076,953
Nebraska	2,249	21	20,076,205
Iowa	1,453	14	10,351,289
Missouri	228	2	4,283,674
Other Sales*	200	2	2,545,733
Total	10,713	100	$84,695,288

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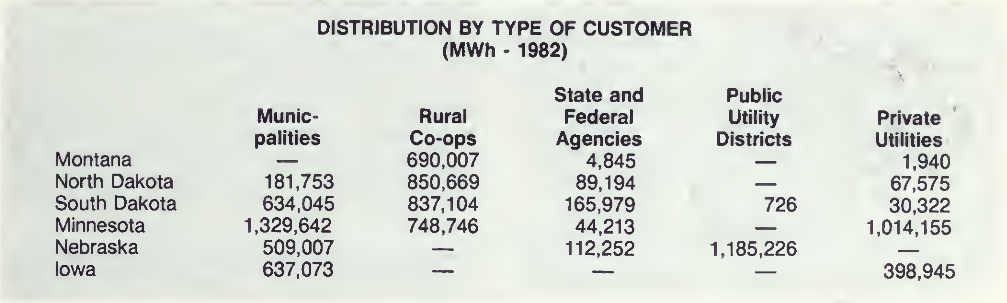
* Not elsewhere classified, e.g., sales to federal and state agencies

This slide shows how the energy generated was distributed by type of customer in 1982.



DISTRIBUTION BY TYPE OF CUSTOMER (MWh - 1982)

	Munic-palities	Rural Co-ops	State and Federal Agencies	Public Utility Districts	Private Utilities
Montana	—	690,007	4,845	—	1,940
North Dakota	181,753	850,669	89,194	—	67,575
South Dakota	634,045	837,104	165,979	726	30,322
Minnesota	1,329,642	748,746	44,213	—	1,014,155
Nebraska	509,007	—	112,252	1,185,226	—
Iowa	637,073	—	—	—	398,945

Although many people have become more energy conscious and we are constructing more energy-efficient homes and appliances, the need for additional electricity will not decrease.

Within the upper basin states, the Corps is examining the possibilities of adding additional generating capacity at the existing sites of Fort Peck, Garrison, and Gavins Point.

In addition, they are studying a site in Gregory County, South Dakota, which, when constructed, has the potential to exceed the generating capacity of all plants now in place on the Missouri's main stem.

The Bureau has identified a number of sites within the UM Region which have excellent potential for adding additional capacity. We feel some of these plants will be constructed; others will remain "on the books" as potential new starts to be reexamined later as our energy needs change and expand.

The level of development of hydropower planned under Pick-Sloan is a positive one. Let's look at two other, far less positive aspects — deliveries of water for irrigation and municipal and industrial uses.

JOSEPH B. MARCOTTE, JR.
REGIONAL DIRECTOR, UPPER MISSOURI REGION
BUREAU OF RECLAMATION

Mr. Marcotte was appointed to his present position in January 1982. He had previously served as Assistant Regional Director (1978-80) and Acting Regional Director (1980-82) of the Bureau's Upper Missouri Regional Office. He has 22 years of service with the Bureau of Reclamation and has served in various capacities involving construction, operation, and maintenance of Bureau projects in Texas, Oklahoma, New Mexico, California, Oregon, and Colorado. Mr. Marcotte is a Registered Professional Engineer and holds a Bachelor of Science degree in Civil Engineering from the University of Oklahoma.

IRRIGATION DEVELOPMENT UNDER PICK-SLOAN MISSOURI BASIN PROGRAM

State	Acres Planned for Development	Acres Federally Developed	Percent
Montana	967,130	47,782	5
Wyoming	281,560	71,773	25
North Dakota	1,266,440	9,019	1
South Dakota	961,210	15,282	2
Colorado	101,280	0	0
Nebraska	989,445	177,230	18
Kansas	193,335	72,598	38
Total	4,760,400	393,684	8

Irrigation water for drought-plagued lands was a key purpose of the 1944 Act. The original plan called for about 200 irrigation units which would have provided water to nearly 5 million acres of land.

Assistant Regional Director Gordon Wendler will discuss progress of development within the Lower Missouri Region; however, this table illustrates that only 8 percent of the irrigation benefits have come to fruition. More than 1.6 million acres of land were acquired for the six main stem reservoirs. Wyoming has received 25 percent of the irrigation that was to be developed under Pick-Sloan, and Montana has received only 5 percent of what was planned. North and South Dakota, which together gave up more than 1 million acres of land, are receiving, respectively, only 1 and 2 percent of the irrigation benefits they were to have received.

Irrigated agriculture plays an important role in the economics of these states; it is little wonder that the people of the upper basin regard the yet-to-be delivered benefits as unfulfilled promises on behalf of the Federal Government.

Each state in the region has firm plans for viable irrigation projects to help them achieve greater agricultural economic stability. Let's examine development within each of the UM states.

This map accompanies Senate Document 191, the authorizing legislation for Pick-Sloan, and depicts the irrigation development as originally planned for Montana.

Very little of that development has taken place; however, we are meeting frequently with state and local officials on some of these potential projects, and the state is cooperating with us both financially and technically on several studies.

The Missouri River tributary portion of Wyoming is divided between the upper and lower basins. Here is the 1944 plan.

Wyoming leads all the states wholly or partially included in the UM Region with irrigation developed at 25 percent of that which was planned. But that state, too, is seeking additional development. The state legislature has committed $600 million over a 6-year period to be used specifically for water development.

Well over 1 million acres were planned for development in North Dakota.

And just over 9,000 acres have been developed. We hope to gain on these figures, however. In fiscal year 1984 we have the largest construction budget for the Garrison Diversion Unit that we have had in many years, and we have a major contract award scheduled next month.

This project has been mired in controversy — principally over mitigation of wildlife habitat losses and potential impacts to the Hudson Bay drainage in Canada. A new wildlife plan for an initial 85,000-acre stage of the project is undergoing review.

The portions of the project currently under construction will have no impact on Canada. We are consulting with the Canadian government to confirm our commitment to the Boundary Waters Treaty. The project continues to enjoy strong non-partisan support within the state.

Almost another million acres of irrigation were envisioned for South Dakota.

While a few small projects have been developed, it represents less than 2 percent of what was planned. Most of you are aware that construction became inactive on the 190,000-acre Oahe Project in 1978; however, the project has not been deauthorized.

While it appears somewhat doubtful that that project will be completed as originally designed, it is a prime example of changing values since passage of the Flood Control Act.

Local support for Oahe eroded over the years, but the people are still working for water development. For instance, we are working with state and local sponsors on several viable potential projects to help satisfy their needs.

One study, identified as the South Dakota Water Deliveries, sometimes called Garrison Extension, will investigate the potential of supplying additional water from the Garrison Diversion Unit in North Dakota to the James River in South Dakota. This additional water would be used for irrigation, municipal, industrial, recreation and fish and wildlife purposes along the entire James River area.

Another study, commonly known as CENDAK, proposes to deliver water in the central part of the state for multi-purpose uses with emphasis on irrigation. The study is being sponsored by a local group from a six-county area and the State of South Dakota. The plan, as proposed by the local group, envisions irrigation development of approximately 400,000 acres.

The Bureau is working with the state and the local group to develop plans and studies which would allow congressional authorization of the project. There is also good potential and strong local support for providing a water supply system to more than 27,000 acres of land in Charles Mix County in southeastern South Dakota.

Water would be lifted by pumping from Lake Francis Case to a main canal that would convey the water to the project area for sprinkler irrigation.

Through cooperative efforts among the state, local project sponsors and the Bureau, a Regional Director's planning report and draft environmental statement will be completed in 1983 and advanced planning activities are scheduled to begin in fiscal year 1984.

There are other projects throughout the UM Region with excellent potential. I mention these few simply to illustrate that each state does indeed have plans in hand. However, I must also point out that even if all of these plans were developed, they would still not meet all the commitments for irrigation made under the Pick-Sloan Missouri Basin Program.

It is also important to recognize that the main stem reservoirs provide benefits to agriculture throughout the entire basin. For instance, the Corps issues permits for irrigation of lands adjacent to the reservoirs.

There are also thousands of acres that have come into production in the lower basin states as a result of the Corp's bank stabilization and diking program. The values of crops grown in these areas are not included in Pick-Sloan statistics.

Delivery of municipal and industrial water is also a recognized part of the Pick-Sloan Plan.

Nearly 21,000 acre-feet of non-agricultural water was delivered by the Bureau to 127,000 people within the Upper Missouri Region last year. There are many thousands more people, in large communities and rural areas alike, who are looking to Reclamation for a safe, dependable, long-term source of water.

Parts of the States of North Dakota, Wyoming and Montana contain one of the largest known coal deposits in the world. I believe water will eventually play an important role in transportation and energy conversion.

The Bureau has the authority to market water which is available in federal reservoirs for industrial use until it is needed for agriculture sometime in the future. We currently have three active contracts — one in South Dakota and two in North Dakota.

Others are in the negotiation stage. We do not sign these contracts until the companies come forth with firm plans for use of the water, and each plan must undergo site-specific environmental evaluations.

It is apparent that there are many valid — however, often conflicting — demands on the water of the Missouri basin system. The Pick-Sloan Plan is the most comprehensive plan ever developed for management of a river basin as large as this. While many benefits have been derived from development under Pick-Sloan, all of the commitments of the plan have not yet been fulfilled. A conference such as this provides an opportunity for us to stress the importance of working closely with our state and federal governments to insure that our needs will be met.

Mr. Gordon M. Wendler, *Assistant Regional Director, Lower Missouri Region, U.S. Bureau of Reclamation, Denver, Colorado.*

Much of the irrigation development accomplished under Pick-Sloan — and some of the hydropower development — has taken place in the lower reaches of the Missouri River basin. This is the area included in Reclamation's Lower Missouri Region. Geographically, this includes the eastern slope of Colorado, southeastern Wyoming, most of Nebraska, and the northern half of Kansas.

Development has taken place on the tributaries and main stem of the Niobrara, Platte, and Kansas Rivers. A review of the Pick-Sloan Plan shows that within this region 13 projects have been completed and are operational; two more are under construction; preconstruction activity is underway on one unit; feasibility level planning is underway on one; and nine other projects are inactive or have been rejected.

Let's take a quick look at the projects that have been completed or on which work is continuing. Within the Niobrara River basin, the Ainsworth Unit is operating and construction was started on the O'Neill Unit but has been suspended. More on this later.

Within the Platte River basin, the Kortes and Glendo units have been completed in Wyoming. These are the only two Pick-Sloan projects within the region with hydropower functions. In Colorado, on the South Platte, preconstruction activity is underway on the Narrows Unit. In Nebraska, completed projects within the basin include Sargent and Farwell. Construction is well underway on the North Loup Division, and feasibility level planning activity is getting underway on the Prairie Bend Unit on the Platte in central Nebraska.

The Kansas River basin rounds out the major drainage basins located within the Lower Missouri Region and completed projects include Armel, Frenchman-Cambridge, Bostwick, Almena, Kirwin, Webster, Glen Elder, and Cedar Bluff. These units and divisions account for 11 water storage facilities.

Combined, the projects completed under Pick-Sloan provide hydropower production, water for 334,000 acres of cropland, water-based recreation opportunities, water for municipal and industrial use, flood control, and enhancement of fish and wildlife habitat.

I will now discuss in more detail four Pick-Sloan projects of particular interest on which activity is underway. These are the O'Neill Unit, the North Loup Division, the Prairie Bend Unit, and the Narrows Unit.

Work is about 25 percent complete on the North Loup Division. Calamus Dam and Reservoir on the North Loup River near Burwell, Nebraska, is the largest and most costly single feature of the project, and work was started on this feature first. Calamus Reservoir will store some 103,600 acre-feet of water, and initial storage is scheduled late in 1984.

Other major features include Mirdan Canal, Davis Creek Dam, and various canals and laterals that make up the water distribution system which will provide irrigation service to 53,000 acres of land in the North Loup Valley.

The project will be completed by 1992 if Congress provides required funding.

When completed, the project will result in benefits of $12.4 million annually.

During the construction period, 5,700 work-years will result from the project. In addition, about 140 Reclamation personnel will be employed in the Ord-Grand Island area when construction activity peaks during the next few years.

As you may be aware, construction of the O'Neill Unit in north central Nebraska has been delayed by court injunction. In an effort to satisfy the concerns of the court, we filed a second supplement to the final environmental statement in July 1981. It addressed questions concerning geology, alternatives, an endangered species study, and the Corps of Engineers 404 Dredge and Fill Compliance.

Editor's Note A photographic slide map used in this presentation showed existing and proposed developments included in the Pick-Sloan Plan but could not be reproduced here. An attachment at the end of Mr Wendler's remarks presents Pick-Sloan Missouri Basin Program projects completed and active in the Lower Missouri Region

In October of 1981, we released an alternatives study concerning the project which was conducted at the request of Congress. This report was issued as an appendix to the environmental statement in an effort to keep interested persons informed.

In March of 1982, the plaintiffs filed a motion to amend and supplement their complaint to add eight new issues and also citing objections to the second supplement. These were not allowed and a trial date has been set for February 1, 1984, to hear testimony concerning the Government's motion to lift the injunction.

Two other activities are underway concerning the unit. The Nebraska congressional delegation has asked Reclamation to array potential opportunities for reducing costs and transferring other costs to a non-federal entity. Work is underway on this request.

In addition, legislation has been approved which provides authority for the Bureau to fund a state-led study of alternatives to the project, including one proposed by Nature Conservancy. In 1980, the Conservancy purchased land which had been identified as needed for rights-of-way for Norden Dam and Reservoir.

Reclamation has recently received authority and funding to conduct a feasibility level study on the Prairie Bend Unit located on the Platte River in central Nebraska. This study is expected to take four years and costs will be shared with the Central Platte Natural Resource District. In addition to improving and maintaining habitat for migratory waterfowl, the unit would irrigate land in parts of Dawson, Buffalo, and Hall counties and could stabilize ground water by means of conjunctive use of ground and surface water and ground-water recharge. Other benefits could include flood protection, recreation, ground-water quality improvement, and streamflow regulation.

GORDON W. WENDLER, ASSISTANT REGIONAL DIRECTOR, LOWER MISSOURI REGION, BUREAU OF RECLAMATION. Mr. Wendler was appointed to his present position in June 1982. Since joining the Bureau of Reclamation in 1948, Mr. Wendler has served in various capacities. From 1950-61, he was a Civil Engineer in the Area Planning Office, Ainsworth, Nebraska. During this time, he conducted investigations of water resources development in the Pick-Sloan Missouri Basin project. He was Chief, Engineering Branch of the Bureau's Projects Office in Grand Island, Nebraska, from 1961-62, and was appointed Regional Program Officer of the Engineering Programs Division, Denver, Colorado, in 1971. Mr. Wendler holds a Bachelor of Science degree in Civil Engineering from the University of Nebraska — Lincoln.

The Narrows Unit is located on the South Platte River near Fort Morgan in northeastern Colorado. The project was authorized for construction in 1970, and work began in 1976 but was stopped the following year when funding was halted by the now infamous President Carter's "hit list!"

Work resumed in 1982 when Congress directed that the Secretary ready the project for construction. In response, $500,000 in Reclamation's budget was transferred so that preconstruction work could begin. An additional $500,000 was made available by Congress in 1983 to continue this activity.

Major work has included reevaluation of flood control, agricultural benefits, payment capacity, fish and wildlife enhancement and mitigation measures, and the recreation plan. Demand for municipal and industrial water supplies was also reviewed and project costs and design updated. A draft supplement to the final environmental statement was filed July 20 and a public hearing concerning the draft will be held August 30 in Fort Morgan, Colorado.

The project will provide supplemental irrigation water to 287,000 acres in the region. Total water supply is expected to average about 130,000 acre-feet annually.

Narrows Reservoir will have a gross storage capacity of more than 1 million acre-feet.

Estimated total cost of the unit is $372 million, of which $249 million is reimbursable. Total annual costs for the project are estimated to be $16.7 million and total annual benefits are estimated at $22.4 million, resulting in a positive benefit-cost ratio of more than 1.3 to 1.

Extensive coordination with affected state and federal agencies through the period of investigation has been conducted. The Fish and Wildlife Service in January issued an opinion reflecting a finding of jeopardy concerning the whooping crane and its related habitat in Nebraska. Meetings with Fish and Wildlife have been initiated to define measures to preclude jeopardy which can be implemented by the various interests.

It should be noted that of the seven states included under Pick-Sloan, Colorado is the only one that has not seen significant development. Narrows represents perhaps the last opportunity for Colorado to get a Pick-Sloan project constructed.

As mentioned earlier in this session, revenues from Pick-Sloan hydropower production are often used to subsidize irrigation development. Now a word about the rates used for the sale of hydropower.

Rates for federal power are determined from repayment studies based on criteria approved by Congress. Recent studies have been based on the concept that all units of Pick-Sloan will ultimately be developed. Allocations for various functions are made accordingly. Current studies show that all power allocations will be paid by year 2035. After that time, power revenues are available for irrigation assistance after operating expenses, interest, and replacement costs are paid.

In 1978, the Department of the Interior came under criticism for using this "ultimate development concept" as a basis for cost allocation and repayment purposes. An audit report from the office of the inspector general recommended a reanalysis of the Pick-Sloan Program involving repayment studies and cost reallocations based on a "current" development approach instead of the "ultimate" development concept.

In a recent opinion, however, Interior Solicitor Bill Coldiron upheld the "ultimate" development concept for Pick-Sloan cost allocation and payment purposes.

Solicitor Coldiron wrote, "It seems clear that the information before Congress at the time of Pick-Sloan authorization, including the findings and recommendations as to cost allocation and repayment made by the authorizing act, contemplated use of the 'ultimate development concept.'" He went on to say that "current development" cannot be used because such a change would violate both the specific intent of Congress and more recent laws.

It is my feeling, however, that power rates may increase in the future regardless of which concept is used. Without ultimate development, reallocation of Pick-Sloan will be required based on current use. This would result in a rate increase because more cost would be allocated to commercial power and less to irrigation. On the other hand, to achieve ultimate development probably would require participative nonfederal financing.

I want to emphasize, however, that there is no evidence that power rates would increase strictly because additional units — such as the O'Neill Unit and the Narrows Unit — are constructed.

As mentioned earlier today, many of the Pick-Sloan units have never been constructed — particularly those with irrigation as a primary function. Will many of these be realized? What is the future of the Pick-Sloan Program?

Several elements will determine the answers to these questions. Although the Administration has indicated a willingness to support western water resources development, it has indicated that a sharing of costs by non-federal entities will be required. Recently, Secretary Watt elaborated by stating, "It will be Department of the Interior policy to seek construction financing for each new start at a level consistent with the abilities of non-federal sponsors to participate financially and to honor prior commitments by the United States. Current repayment requirements will remain in effect." In short, cost sharing arrangements will be established on a case-by-case basis. In response, some states have already set aside funding for use in cost sharing.

The concept of a Pick-Sloan program development fund has also been mentioned as a source of funds to participate in financing. Such a fund would probably require congressional authorization. To give some idea as to what that could mean in the way of revenues, a 1 mill per kilowatt-hour power rate increase, 50 cents an acre-foot surcharge for irrigation water, and $1 an acre-foot surcharge for M&I water in the Missouri River basin states would result in about 14 million in revenue annually for such a fund, without even considering revenues from navigation or recreation.

Participative financing is not a new concept. The 1936 Flood Control Act signed by President Franklin D. Roosevelt required 50 percent funding by non-federal interests for water resource development. The 1938 amendment required 100 percent non-federal funding for flood control. However, the 1940/41 amendment changed that requirement in order to help with the Great Depression recovery; but even then, land aquisition, easements, and right-of-way still required non-federal funding.

I am sure you recall that Presidents Nixon, Ford, Carter, and now Reagan all advocated participative financing of water and power development. Even as recently as mid-November 1982, Representative "Mo" Udall acknowledged that 100 percent federal financing of water and power development is a thing of the past. Therefore, it should not come as too much of a shock that the concept of joint funding of water and power development is probably here to stay.

Regardless of the scope of future construction, Pick-Sloan is monumental from a social, physical, and economic standpoint. Significant benefits are being provided for the people of the Missouri River basin states. The program will go down in history as one of the most important water resources programs of our time.

Pick-Sloan Missouri Basin Plan

PROGRAM WITHIN THE LOWER MISSOURI REGION

Completed projects

Colorado	Armel Unit — Located on the South Fork of the Republican River in eastern Colorado; Bonny Dam and Reservoir is the main feature; completed in 1951. Provides flood control, recreation, and fish and wildlife benefits.
Kansas	Almena Unit — Located on Prairie Dog Creek in north-central Kansas; Norton Dam and Reservoir is the main feature; completed in 1964. Total irrigable area is 5,760 acres. Also provides municipal water supply for town of Norton.
	Cedar Bluff Unit — Located on the Smoky Hill River in northwestern Kansas; Cedar Bluff Dam and Reservoir is the main feature; completed in 1951. Provides irrigation water for 6,800 acres.
	Glen Elder Unit — Located on the Solomon River in north-central Kansas; Glen Elder Dam and Waconda Lake are the main features; completed in 1969. Provides municipal water supply to the town of Beloit.
	Kirwin Unit — Located on the North Fork of the Solomon River in north-central Kansas; Kirwin Dam and Reservoir is the main feature; completed in 1958. Provides irrigation water to 11,400 acres.
	Webster Unit — Located on the South Fork of the Solomon River in northern Kansas; Webster Dam and Reservoir is the main feature; completed in 1961. Provides irrigation water for 8,500 acres.
Nebraska	Ainsworth Unit — Located on the Snake River in north-central Nebraska; Merritt Dam and Reservoir is the main feature; completed in 1965. Total irrigable area is 34,500 acres.
	Bostwick Division — Located on the Republican River in south-central Nebraska and north-central Kansas; Lovewell Dam and Reservoir is the main feature; completed in 1968. Provides flood control and irrigation water for 86,200 acres.
	Farwell Unit — Located near the North and Middle Loup Rivers in central Nebraska; Sherman Dam and Reservoir is the main feature; completed in 1966. Provides irrigation water for 50,000 acres.
	Frenchman-Cambridge Division — Located on the Republican River and three of its tributaries in southwestern Nebraska; completed in 1961, major features include Enders Dam and Reservoir, Trenton Dam and Swanson Lake, Medicine Creek Dam and Harry Strunk Lake, and Red Willow Dam and Hugh Butler Lake. Provides flood control and irrigation water for 66,100 acres.
	Sargent Unit — Located on the Middle Loup River in central Nebraska; Milburn Diversion Dam is the main feature; completed in 1957. Provides irrigation water for 13,400 acres.
Wyoming	Glendo Unit — Located on the North Platte River in eastern Wyoming; major feature is Glendo Dam and Reservoir; completed in 1958. Provides irrigation water for 51,000 acres, flood control, and generates 500 million kwh annually from several powerplants.
	Kortes Unit — Located on the North Platte River in central Wyoming; Kortes Dam and Reservoir is the main feature; completed in 1951. Generates more than 140 million kwh of power annually.

Continued on page 46.

Pick-Sloan Missouri Basin Plan
PROGRAM WITHIN THE LOWER MISSOURI REGION, Continued
Active Projects but not completed

Colorado Narrows Unit — Located on the South Platte River in northeastern Colorado; preconstruction activity is underway. Project will provide irrigation water for 287,000 acres.

Nebraska North Loup Division — Located on the Calamus River and other tributaries in central Nebraska; major feature is Calamus Dam and Reservoir. Project is 25 percent complete and is scheduled to be finished in 1992. Project will provide irrigation water for 53,000 acres.

O'Neill Unit — Located on the Niobrara River in northern Nebraska; Norden Dam and Reservoir is the primary feature. Construction began in 1976 but was halted in 1977 by a court injunction. A trial is scheduled for February 1984. Project would provide irrigation water for 77,000 acres.

Inactive

Colorado Armel Unit irrigation component — (see Armel Unit, completed); would have provided water for about 24,000 acres; determined to be economically unfeasible.

Wray Reservoir — Located on the North Fork of the Republican River in northeastern Colorado. Would have provided water for irrigation. Inactive.

Nebraska Boelus Reservoir — Located on the South Fork of the Loup River in central Nebraska. Would have provided irrigation and flood control. Rejected.

Dismal Reservoir — Located on the North Fork of the Loup River in central Nebraska. Would have provided irrigation and flood and silt control. Rejected.

Erickson Reservoir — Located on the Cedar River in central Nebraska. Would have provided irrigation and flood and silt control. Suspended.

Lavoca Flats — Located in northern Nebraska; authorized in 1954 along with Ainsworth, Mirage Flats extension, and O'Neill Unit. Inactive.

Loretto Reservoir — Located on Beaver Creek near Albion, Nebraska. Would have provided irrigation and flood and silt control. Inactive.

Midstate Diversion — Located along the Platte River in central Nebraska. Inactive.

Plum Creek Reservoir — Located on Plum Creek south of Lexington, Nebraska. Would have provided irrigation and flood and silt control. Rejected.

Studies

Feasibility level and other studies have been performed on 14 other projects in the Lower Missouri Region.

The Missouri Basin Account

Accounting, Repayment and Financial Status of the Pick-Sloan Missouri Basin Program and Integrated Projects

Mr. James D. Davies, *Area Manager,*
Billings, Montana, Area Office,
Western Area Power Administration, Billings, Montana.

A power repayment study is an annual assessment of the financial status of the project to determine if existing rates for power are sufficient to meet repayment criteria. The repayment criteria requires that annual expenses must be recovered each year and that project investment costs must be repaid within specified time periods. The annual expenses are comprised of operations and maintenance costs, purchased energy, interest expense and required payments to several smaller projects which have been integrated into the Pick-Sloan Missouri Basin Program (P-S MBP) for operational and repayment purposes. Investments include the costs allocated to power, as well as those costs associated with irrigation projects beyond the irrigators' ability to repay. If revenues are not sufficient to meet payout for a given repayment study, the firm power rate is adjusted until payout is obtained.

A repayment study is completed each year and includes the historical revenue and expense data through September 30 of the study year, plus projections of revenues and expenses for the study period of 100 years. Data is provided by the Bureau of Reclamation and the Corps of Engineers, in addition to that provided by the Western Area Power Administration. Data from the Bureau includes costs and schedules for future irrigation projects and associated water depletions plus other expected water depletions; generation schedules for Bureau power plants; investment data; and expense and revenue data. The Corps provides generation schedules for Corps power plants based on depletion data furnished by the Bureau, plus data on investments and expense and revenue data for Corps projects. Based on expected irrigation pumping requirements and generation from the Bureau and Corps power plants, Western develops marketing projections and includes Western's investment and expense and revenue data. This data is combined into a single repayment study for the Eastern and Western Divisions of the P-S MBP and the Integrated Projects. The "Integrated Projects" (Colorado-Big Thompson, Kendrick, Shoshone and North Platte) were constructed prior to the passage of the Flood Control Act of 1944 and were subsequently integrated with the P-S MBP for operational and repayment purposes.

Joint costs of the dams and reservoirs are allocated to the multi-purpose functions of irrigation, power, flood control and navigation on the basis established by the agency responsible for their construction (i.e., Bureau or Corps). The costs allocated to flood control and navigation have been determined to be nonreimbursable and are not included in a repayment study. The joint costs allocated to irrigation and power are reimbursable and so are "specific" costs of these two functions. Transmission lines, substations and generators are typical items specific to power. Canals and pumping plants are specific to irrigation.

The total cost of an irrigation project is comprised of the specific costs associated with the project, plus any assignable joint irrigation costs and any suballocated pumping power costs. These costs which are determined to be "beyond the ability of the irrigators to repay" are the costs included in the repayment studies. The power revenues needed to repay these irrigation development costs are termed "aid to irrigation."

An important feature of the P-S MBP is the suballocation to irrigation of a percentage of the specific and the joint costs allocated to the power function. The power costs suballocated to irrigation are interest-free while the remaining costs allocated to the power function are interest bearing. The suballocation reflects the portion of the generation and transmission

JAMES D. DAVIES
AREA MANAGER, BILLINGS, MONTANA AREA OFFICE,
WESTERN AREA POWER ADMINISTRATION

Mr. Davies has held his present position since June 1978. In the position he is responsible for operation and maintenance within the largest geographical segment of the WAPA system, which contains over 7,000 miles of transmission lines and 90 substations serving 250 preference customers. He has held previous positions with the Bureau of Reclamation in South Dakota, Montana and Arizona. He holds a Bachelor of Science degree in Electrical Engineering from South Dakota State University.

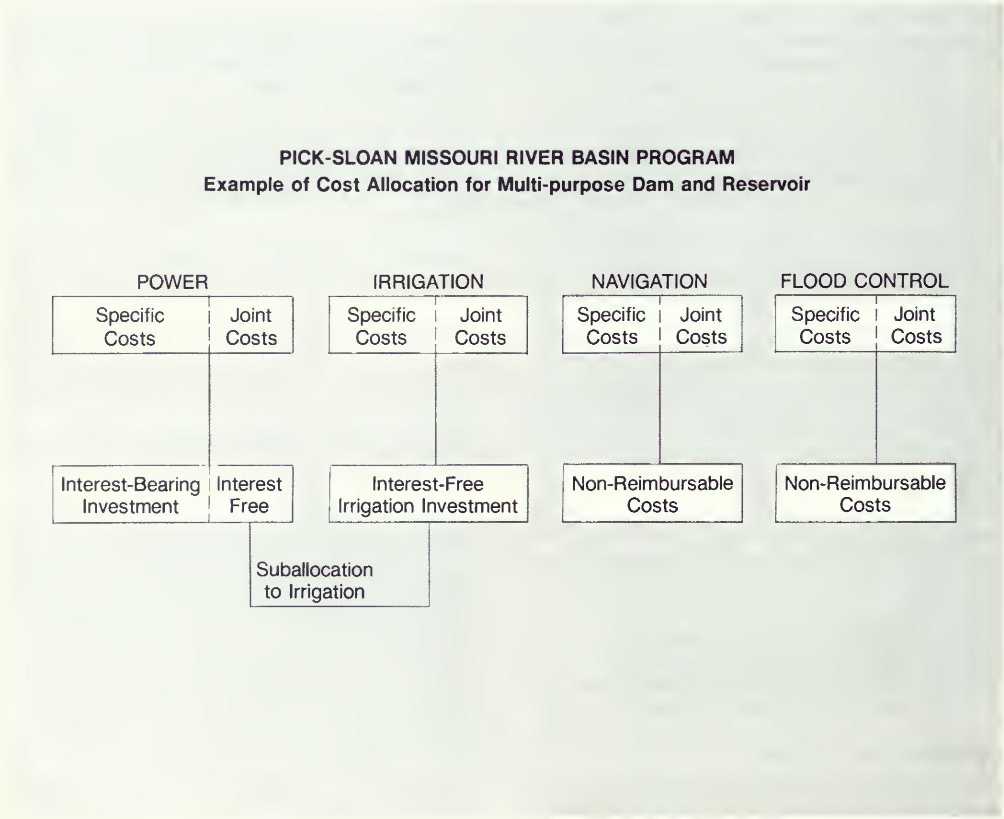
capacity which will ultimately be used for irrigation pumping.

The commercial power investment, comprised of the allocated joint costs and specific costs, must be repaid within 50 years of the facility becoming operational. The highest interest-bearing power investment group is repaid first. The interest-free irrigation investment is to be repaid within 50 years plus a 10-year development period. The irrigation investment, including the suballocated costs, is normally repaid after the power investment has been repaid since the irrigation investment is noninterest bearing. During the 50- and 60-year repayment periods for power and irrigation features, no interim payments are required. However, the power rates are set so that the annual expenses will be recovered each year, and required project investment payments will be made on or before they are due.

There is considerable irrigation yet to be developed in the P-S MBP to arrive at the "ultimate development" level. Irrigation aid costs associated with the ultimate development of irrigation are included in the repayment studies. However, because of the 60-year repayment period for irrigation projects, the costs of those projects which are scheduled after the 40th year of a study do not impact the power rate.

In summary, the power repayment study, in addition to determining the revenues required for the study period, provides an accounting of the status of repayment as of September 30 each year and also shows the expected capability of the P-S MBP to repay existing and future power investment costs and assistance to irrigation.

Editor's Note: The following tables and charts were presented as photographic slides and discussed by Mr. Davies during his presentation.



PICK-SLOAN MISSOURI RIVER BASIN PROGRAM
Example of Cost Allocation for Multi-purpose Dam and Reservoir

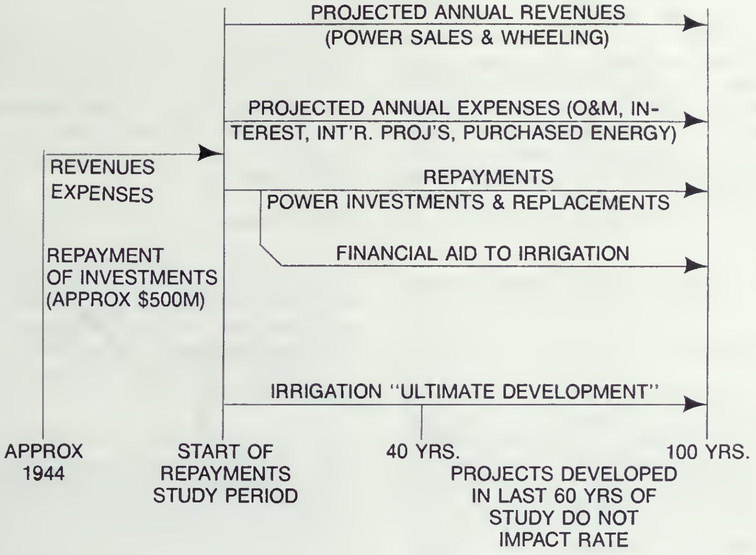
POWER
Specific Costs | Joint Costs
Interest-Bearing Investment | Interest Free
Suballocation to Irrigation

IRRIGATION
Specific Costs | Joint Costs
Interest-Free Irrigation Investment

NAVIGATION
Specific Costs | Joint Costs
Non-Reimbursable Costs

FLOOD CONTROL
Specific Costs | Joint Costs
Non-Reimbursable Costs

POWER REPAYMENT STUDIES


PROJECTED ANNUAL REVENUES (POWER SALES & WHEELING)
PROJECTED ANNUAL EXPENSES (O&M, INTEREST, INT'R. PROJ'S, PURCHASED ENERGY)
REVENUES
EXPENSES
REPAYMENTS
POWER INVESTMENTS & REPLACEMENTS
FINANCIAL AID TO IRRIGATION
REPAYMENT OF INVESTMENTS (APPROX $500M)
IRRIGATION "ULTIMATE DEVELOPMENT"
APPROX 1944
START OF REPAYMENTS STUDY PERIOD
40 YRS.
100 YRS.
PROJECTS DEVELOPED IN LAST 60 YRS OF STUDY DO NOT IMPACT RATE

Note that irrigation development scheduled after the 40th year of the projected study period does not require repayment during the study period and therefore does not impact the power rate. The repayment criteria for irrigation investment is 50 years plus a 10-year development period.

HISTORICAL ANNUAL DATA

REVENUES:	$105M – 125M
EXPENSES:	$ 60M – 80M
REPAYMENTS:	$ 65M – 25M

Revenues vary due to water supply and the amount of energy available for sale. Expenses also vary due to water supply with the purchased energy expense increasing in a low water year. Expenses of the integrated projects also vary depending on required repayment and replacements.

P-S MBP STATUS — SEPT. 30, 1982

IRRIGATION INVESTMENT	$ 292,500,000
POWER INVESTMENT	1,050,000,000
POWER INVESTMENT REPAID	544,000,000
INTEREST PAID (POWER)	460,000,000
O&M EXPENSE PAID	508,000,000
PURCHASED ENERGY EXPENSE PAID	83,000,000
INTEGRATED PROJECTS EXPENSE PAID	184,000,000
TOTAL REVENUE	$1,800,000,000

Audience Questions Regarding the Pick-Sloan Missouri Basin Plan

Question: (Les Holland)

I'm not sure whether you have done this or not, but have you taken into account if you open up the various lands, the hundreds of thousands of acres to irrigation, what impact that will have on the grain prices and on the transportation systems of rail, water and highways. How do you put that into the accounting system, or do you?

Jim Davies

No, we don't. None of that is factored into the repayment study.

Question: (Robert Hipple)

I have a double-barreled question. Mention was made, almost in passing, of a proposed project which has not yet been authorized in the State of South Dakota which would be a pump storage project in Gregory County. The fact stated was that this would virtually double the generating capacity of the entire system. We just heard a discussion of the repayment program. I think the Garrison Project is one of national benefit; it certainly is of regional benefit, and it is not merely of local benefit. The point is this. With double capacity, aren't we going to have double revenue from the sale of electricity as a result of the construction of that project? Is that project to be integrated as a part of Pick-Sloan and if so, is that revenue going to be available after the year 2000, for example, to assist in repayment of irrigation benefits?

Joe Marcotte:

Mark, do you know, is it to be integrated as a part of the Pick-Sloan?

Brig. Gen. Mark Sisinyak:

The intent, Bob, at this stage is to put forth the Gregory County Pump Storage facility as a candidate for incorporation in the Pick-Sloan Plan. Intent. Keep in mind judgment has not been passed in that regard. In terms of revenues, right now the best we can tell from the engineering that has been done and the benefit cost ratio incorporating consideration as to what that power might be sold for in the out years, it appears as if the repayment on investment would be about 1.6 dollars to the dollar invested. I'm not sure that really addresses your basic question, but the fact is that it does look like a very good investment. So good, I might add, that there is some interest on the part of the State of South Dakota and private entities in the region of possibly taking the project on, financing the project, and hopefully receiving some of the benefits or all depending on the degree of financing. It is financially a good investment. But the key is if you're going to build something that large, do we really need that much peaking power? To date, indications are by the Western Area Power people that the answer to that question is "yes," it is needed. Did I leave out some of your question?

Robert Hipple:

No. I would like to go back to my people in South Dakota and tell them, "Here, this is not going to merely benefit the payment of irrigation. It is going to help the repayment problem of irrigation projects in Kansas, Colorado, Montana and all the rest."

Mark Sisinyak:

You can say that without qualification, Bob, if in fact when the project is fully authorized and appropriations are made, it's handled as part of the Pick-Sloan Plan. Frankly, with the amount of money involved — $1.2 billion it looks like before we're done — if those costs were taken on by somebody other than the Federal Government, then quite obviously where the revenues would go is also a question that needs to be answered. To be very candid, in terms of what direction we are headed, I'd say we're headed in about five directions at once. There are all sorts of things being looked at in terms of how that project might be handled. Who, for instance, once it's built might end up being responsible for the operation of it? The Corps of Engineers' position, which is always open to question for obvious reasons, is that that project which basically takes water from the main stem system, large amounts of it at various times, will have to be integrated and run so intimately with the rest of the system that control of the facility really should remain with the Federal Government in the form of the Corps of Engineers. I'm not sure how strong that position is. We're still hanging in there, and I think for justifiable reason. But as I said, the whole financing issue casts some light on the thing and opens up new vistas we haven't even looked at before.

Joe Marcotte:

Could I add one thing there, Mark. Regarding the question of whether the revenues would be available after 2000, given the complexity of what kind of a project it is, if it were a project of Pick-Sloan, it is required that the investment be paid off within 50 years and that's an incremental investment. So that 50-year repayment would not begin until after you had made the investment on that part. So it would be sometime beyond 2000 if it were a part of Pick-Sloan.

Robert Hipple:

Ultimately it would be available if it was authorized as a part of Pick-Sloan and built and the revenue came in?

Joe Marcotte:

That's an accurate statement.

Mark Sisinyak:

That's correct.

Question: (Jack Odgaard)

We've heard a lot about the lack of further development on the irrigation portion of Pick-Sloan. If you were to abandon any further irrigation development in that and have to reallocate costs, what would that do today and tomorrow to the power rates you would be charging? How much would it increase them?

Gordon Wendler:

I have no idea specifically. It would be substantial. But I can't give you a number on that.

Question: (Carol Hamvas)

Would you please give me some examples of private entities that would have enough money to invest in this sort of project?

Bob Neufeld:

We have been discussing this very concept partially because of the Administration's position which has announced that with respect to hydropower development, these projects are going to be built in the future by financing through bond issues secured by take-or-pay contracts from the utilities that are going to purchase the output of the project. That means that essentially the Federal Government stands no risk in constructing this thing. It will be the utilities that will have the financial risk in this undertaking. The kinds of people we have been talking about include practically every utility in the region. This project, in full development, would be 2360 megawatts. To even make it happen at this point, you would have to involve the big ones like Northern States Power, some of the Iowa utilities, and all the utilities in South Dakota. Practically everyone in the region would have to be involved in it. This is definitely a regional project. Did I answer your question?

Carol Hamvas:

Yes.

Question: (unknown)

What areas will be benefited by this? Who gets the benefits from it?

Mark Sisinyak:

I'll take a stab at it and then by all means, Bob, you can add to it. The marketing of the power generated by the project, should it be a Pick-Sloan project and should it be operated by the Federal Government, would be a matter for the Western Area Power Administration to determine as part of its marketing strategy. But in essence, I would assume the power would be made available to roughly the same customers that are availing themselves of power in this area now. It would stretch all the way east, I would assume, to Minnesota and Wisconsin; all the way west to all of Montana and I think a little over into Utah; down into Nebraska; over into Iowa. Basically as described earlier, it is regional power distribution. You may have more accurate data than that.

Bob Neufeld:

The most accurate answer I can give to that question depends on how it's financed. If it's financed out of the Federal Treasury as your traditional Pick-Sloan project, that power is going to end up being marketed as power off the main stem generators is marketed. If it's financed upfront with private funds by a bond issue the risk of which is being taken by the utilities, I am sure those utilities are going to demand they get the use of the power they are paying for. So it depends on who will be the participating entities in the project — the financing mode.

Question: (unknown)

All of the power then goes to the area. Do they ever go down to Kansas and Missouri?

Bob Neufeld:

It very well could. The current main stem power is being marketed in the northwest region of Missouri, as I understand it, and in Kansas.

Mark Sisinyak:

Very small amount, Bob, but some. The Southwestern Power Administration generally takes care of power distribution in the lower part of the basin. But there is some power distributed that far south.

Comment: (Norman Stucky)

Just a comment. General Sisinyak this morning mentioned that the aspects of the Pick-Sloan Plan related to the fact that the framework is flexible. Since 1944 there have been a number of very significant developments on the farm scene; namely, seed improvement, plant genetics, center pivot irrigation, some substantial improvements where we are now producing record crops. No one really knew much about sorghum or soybeans back then. It all adds up to the fact that today the American taxpayer is being asked to choke up something in the neighborhood of $21 million for a payment-in-kind program of questionable value in terms of reducing surplus. I would like Joe to comment on the flexible aspect of the irrigation development that has been proposed as part of the Pick-Sloan program. Frankly, from my viewpoint as a dryland farmer from Kansas, I am thankful all that land wasn't under irrigation because we couldn't even give it away now.

Joe Marcotte:

I'm not sure I am qualified to address this. I think it's a longer range program than just this year, though. I have had occasions the past couple of years to participate in an activity that talked about 3 to 5 million acres of prime agricultural land in the Nation going out of production each year. I think there is going to be a continuing growing demand for food in the country. There's no doubt right now we probably have the capability to produce all that's needed. I don't believe the issue, particularly in the Dakotas, is one strictly of increased production. I think the issue in the Dakotas is one more of stability. They, too, produce a good crop most years but they have an unpredictable situation in which they go periods of time when they don't produce a crop and particularly with the economic environment we have in the country now, a farmer who doesn't produce some reasonable crop every year is in trouble. So I think more important to the Dakota areas is stability.

I'm not sure I can answer your question because you are getting into a very complex national question when you talk about what level of food production to get into.

Question: (unknown)

Jack Odgaard asked about power rates being increased. My question is why exactly are they increasing and will it continue?

Gordon Wendler

I'll take a stab at that. If you use the current use concept — I believe that is the point of your question, rather than the ultimate development concept — in other words, the Pick-Sloan as originally authorized had a lot more acres of land scheduled for production. If we don't develop those and go to the current use — in other words, all we have just now developed — then when you reallocate the costs they're going to end up based against the commercial power costs which, in effect, raises the cost of project power.

Joe Marcotte:

Some of those costs presently allocated to irrigation are non-interest bearing so they fall into that component when the payment would begin after the 50-year period. So those costs are being held in abeyance right now and they will become due and payable, I suppose, when that decision is made. In addition to that, you add on the interest component.

Comment: (William Guy)

In answer to one question back, North Dakota and South Dakota have each taken 500,000 acres out of production. The Pick-Sloan Plan has actually reduced our capacity to add to the surplus. South Dakota and North Dakota are simply trying to irrigate a few acres to cut their losses. So if you want to reduce the surplus, go to where it's being raised. We've taken 500,000 acres out of production.

Joe Marcotte:

There's another aspect to that. Generally you do have some competition between dryland and irrigated agriculture, but generally I think we have observed that you shift to a different type of cropping so you have less competition.

Comment: (Jack Odgaard)

I can't speak for the gentleman from Kansas. I can speak for Nebraska because I know about conditions there, and irrigation is a stabilizing factor in the agricultural economy. I appreciate Bill Guy's comments on North and South Dakota because we're also concerned about local economies. We have pictures already of southeast Nebraska going through a drought this year and $50 million crop losses in one year. We can't make farms survive on dryland agriculture. Last year Nebraska contributed $1.85 billion to the U.S. agriculture export. Now that's a benefit to the whole

Nation. Kansas did somewhat less. Iowa contributed a lot, too. That's the kind of thing we're talking about. Social, economic issues. And, Joe, I appreciated your comment. We're not looking at one year. This is a long-range program that benefits the whole Nation's economy because our ag exports are still one of the most tremendous . . . . Speaking from the standpoint of Nebraska — and we appreciate the position of North Dakota, South Dakota and Wyoming — that's our problem and our situation. Tremendous benefits have come to Iowa and Missouri in flood control, lower subsidized reduced power . . . navigation. That's what we're talking about.

Question: (Les Holland)

My question is regarding the impact of opening these acres to irrigation — I don't know how many you're talking about in the whole basin but it is pretty substantial — obviously the benefits would not accrue right away but over a period of time. Have you taken into consideration the additional production and what impact that will have on various modes of transportation and the costs associated with keeping those facilities up? Are those things cranked into the benefits when you come up with the numbers?

Joe Marcotte:

We do a social assessment that talks about those things in a general way and I think we reference them in text, but I don't think we attempt to quantify them.

Gordon Wendler:

There's no financial accounting of it.

Bill Crews:

Again, I would like to thank our speakers and I am sure they will be around for further discussion at your leisure.

CHANGING WATER NEEDS AND ISSUES IN THE MISSOURI RIVER BASIN

Dr. Warren Viessman, Jr., *Professor and Chairman, Department of Environmental Engineering Sciences, University of Florida, Gainesville, Florida.*

Introduction

Over the years, the emphasis on water use in the Missouri River Basin has slowly changed as needs have been modified, issues have waxed and waned, and societal interests have shifted. The original focus on flood control, navigation, irrigation, and hydroelectric power generation has broadened to emphasize other uses such as recreation, environmental enhancement, water quality control, energy resource development, industrial operations, and water for cities. Since the early days of the Pick-Sloan Plan, the parade of changes affecting water management issues has been continuous. These altering forces are constantly reshaping attitudes and will certainly play an important role in future decision-making relative to the use of the Missouri River waters. An accounting of some of the most important influences which have occurred in recent years follows.

- National emphasis has shifted from predominantly water quantity to water quality;
- Environmental enhancement and protection actions have gained broad support (Sandhills Crane issue in the Platte River basin, for example);
- There has been a dissolution of the old congressional power bases for water resources development (noted increase in Eastern influence and concern for infrastructure repair and replacement, water quality management, etc.; there are even clear differences among congressional delegations within individual states over some project proposals);
- There has been a shifting in federal funding priorities from water to programs such as transportation, housing, education, welfare, etc.;
- The public has developed a broader awareness of water issues in the context of environmental and other factors (clearer understanding of ground water — surface water links, ground water — land use links and others);
- The demise of the Water Resources Council and the river basin commissions, no matter what their deficiencies might have been, has created a vacuum and a step backward to provincialism;
- Increased attention to, and broadening in scale of, Indian and federal reserved water rights issues;
- Growing concern about instream flow maintenance and consideration of this as a beneficial use;
- Increased emphasis on rational water pricing, project cost sharing, and setting of user fees;
- Emergence of a strong conservation ethic;
- Rapidly-developing technology — new irrigation methods and farming practices, research in plant genetics, development of powerful analytical techniques for evaluating and designing alternatives for system-wide operations;
- Energy crisis impacts — scarcity of fuels, increased costs;
- Widespread public belief that almost any form of structural development is bad;
- Increasing citizen dissatisfaction with poorly-conceived and laundry-list planning;
- News media emphasis on negative aspects of water resources development;
- Lag in educating the public and decision-making bodies about the consequences of statutory, regulatory, and administrative actions regarding water use and management;
- Shifting in nature of national water policy as needs envisioned years ago have been met and others have become more dominant; and
- Shifting of responsibilities from the Federal Government to state and local governments.

Out of these changes a gradual move toward comprehensive water management seems to be emerging. It embraces providing water of acceptable quality for purposes ranging from municipal water supply to maintaining life cycles of fish and wildlife. It requires recognizing and taking advantage of interconnections between surface and ground water bodies, exploiting the potential for coordinated use of existing facilities, acknowledging the singleness of water quantity/water quality issues, devising new ways to operate old systems, blending structural and non-structural approaches, accepting that the expansiveness of water resources systems may require regional rather than local solutions to problems, and providing equity, insofar as possible, if not on a monetary basis, at least on a service basis, to all those affected. Conceptually, the notion is simple; the trouble is that the boundaries of the physical systems that must be dealt with often differ markedly from the political boundaries that affect how water is used and/or developed. Furthermore, many institutional elements have been narrowly focused and now constrain, if not preclude, good water management.

From Projects to Issues

The focus on water issues in the United States has shifted over the years as problems arose and were solved and new ones took their place. Concurrent with this, the Missouri and other rivers have been subjected to engineering controls, and, as a result, many old water policies have outgrown their value. Furthermore, numerous facilities are reaching their design lives and questions on how to rehabilitate them are being raised. Broad issues rather than local interests which were historically satisfied on a project basis are demanding attention. A transition is underway. Unfortunately, the machinery for coping with new problems has not kept pace with either the scale or nature of the issues which have emerged.

The Institutional Setting

The need for objective water management has been discussed for years. The question is how to do it? Mostly it is a matter of coordinating ***human . . . agency . . . government . . . interest-group*** interests and resolving conflicts among them. This is very easy to say, but very hard to do. And this pervasive institutional problem underlies most water issues. Influences of laws and regulations, political boundaries, agency missions, financing mechanisms, social customs, and the belief that water is free for the taking have all interacted to create a "water crisis" aura. The challenge is to bring about desperately-needed reforms in many of these institutions. Our social goals are continually shifting and these changes must be incorporated in plans and programs. Institutions, as well as facilities, must be kept current. We do not have to accept that prevailing institutional systems are fixed forever. Factual analyses of the impact of existing constraints on addressing water issues must be provided. If benefits can be clearly shown to increase as the result of modifying laws, changing regulations, developing new organizations, etc., then prospects for reform will be enhanced. The tools of diagnosis and evaluation at our disposal permit prompt, in-depth evaluations of many courses of action. It is time to objectively examine systems already in place to see if they can be operated more efficiently and, if so, what changes would be needed to bring this about.

A recent solution to the water supply problem of the Washington, D.C., metropolitan area (WMA) exemplifies what can be done. For years, political jurisdictions, special interest groups, and agencies argued about plans for increasing the WMA water supply. Hundreds of proposals emerged, but none really gained support, mainly because the institutions which would have to implement them did not desire, or were unable, to find a common ground. Efforts to improve the region's water supply situation stagnated, but population growth did not. The result was that periodic low flows in the river became more and more troublesome.

Thoughts of an impending crisis spurred the desire to "do something" and in the late 1970's, a unique marriage of institutional cooperation and technological effort emerged. The Corps of Engineers, the States of Maryland and Virginia, the Interstate Commission on the Potomac River Basin, the Fairfax County Water Authority, the Washington Suburban Sanitary Commission, the Metropolitan Washington Area Council of Governments, and other key actors worked together to provide a setting for coordination of river management policies that would benefit them all.

Analysts found a way to augment the region's water supply without the need for major new facilities. It involved dealing with a maze of engineering, social, environmental, economic, and political problems. The approach was fresh and non-traditional. It focused on what could be done in the face of prevailing constraints. Modern techniques of systems analysis — linear programming, synthetic hydrology, statistical analysis, hydrological modeling, and computer simulation were merged to produce a predominantly nonstructural solution to the water supply problem. As a result, a problem that had been without resolution for almost 30 years was taken in stride. What had appeared to be an impasse in regional cooperation was obliterated. Furthermore, between $200 million and $1 billion were potentially saved compared to previous alternatives. The environmental impact of the solution was minimal. *Objective* analysis was key to this accomplishment.

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Dr. Viessman has held previous positions as Senior Specialist in Engineering and Public Works in the Congressional Research Service at the Library of Congress (1975-83), Director of the Nebraska Water Resources Research Institute (1968-75), and Director of the Water Resources Center at the University of Maine (1965-68). He has coauthored textbooks on water supply and pollution control, hydrology, and water management and served as Secretary of the Universities Council on Water Resources from 1971-75. Dr. Viessman is a Registered Professional Engineer and received his doctorate from the Johns Hopkins University.

Perhaps you wonder why such an approach hasn't been used more widely. It is mainly because everybody wants to control his own water supply. A case in point is New Jersey where there are dozens of separate water supply systems. Boards and managers there seem to believe that if they go in with somebody else, they might have to share. What they fail to recognize is that within their own systems they might have even greater shortages if they go it alone. It is very difficult to get even two different jurisdictions together.

For management to be effective, some sweeping institutional reforms might be required. Their nature will be determined by the scale of the problem being addressed, but agency missions, federal and state laws, and citizen and special interest group attitudes may all have to be tampered with. For example, Karabatsos noted that few old laws had ever been repealed. There will be winners and losers in this process, but unless we can come to grips with those elements which in reality influence our ability to provide more and better water, the actions taken will fall far short of those needed to do the job. In many cases, "surgery" rather than "band-aids" will be required.

Mechanisms for Reform

The threat that we are running out of water is mostly false, but the threat that there may be widespread water shortages resulting from mismanagement, lack of good decision-making, unwillingness to pay the costs for needed programs, and political sensitivity about bringing about needed change is real. Only through objective analyses of water problems and the design of practical options can we expect to overcome past practices and bring about the needed modernization of laws, regulations, and organizations.

Given today's technology, mixed with some imagination, management strategies can be developed to assure adequate water supplies for future generations. This will require that we break away from the mold of tradition, be willing to attack existing constraints, and seek out new ways to solve old problems. We must aggressively seek reforms, where needed, and demonstrate the payoffs to be gained through suggested changes. A role must be played by the *layman,* the *technologist,* and the *decision-maker.*

Comprehensive water management will be implemented only if its approach is supported by facts and sound technical studies. The cooperative water management program developed for the Potomac River basin would never have materialized if it had not been for the work of modelers which proved that the proposed way of operation could save construction costs and result in added availability of water during low-flow periods. However, the attitudes of technical people towards those involved in making investment or other water-management decisions or toward those who are simply concerned with their environment and the quality of water that they drink must change. Technicians must become more responsive to the needs of society, and they must be ready and willing to demonstrate how their technical achievements can be applied to practical advantage by those who must ultimately manage the Nation's waters. Tomorrow's water managers must be of a new breed. Being technically competent is not enough. They must be "society-wise" as well.

Citizens must begin to accept more responsibility in seeking needed reforms in water institutions and in *getting factual data* to support their understanding of issues. Their attitudes should be molded from objectivity, and the responsibility for that has not really been met. Furthermore, many existing institutional problems stem from individual, agency, governmental unit, or other types of parochialism. Until we as citizens are able to accept a wider responsibility and put aside some of our selfish ways, little progress in bringing about a modernization of institutions and in effectively applying state-of-the-art technology will result. A statesman-like attitude is needed, but can we move in that direction?

Finally, policy-makers must begin to break with the "project mentality" of the past and adopt an "issue mentality" if the limited natural and financial resources of this Nation are to be used at anywhere near full efficiency. For too long we have been solving the wrong problems, misallocating resources, and serving selfish interests. Political rewards for perpetuating these circumstances have not played an inconsequential role. It is time that the states and the Federal Government realize that there are regional and local differences in water quality, water quantity, and needs for the future. Problems that are severe in one locale may be of no consequence elsewhere. Programs which tend to apply uniform national and regional standards, while they may be expedient, are often not socially, environmentally, or economically efficient. If there is a water problem in the Missouri River basin, then it should be addressed in the context of its own dimensions and a solution proposed that is most efficient in use of money, time, and impact on the environment. If a statesman-like attitude is needed for the layman, it is all the more appropriate for the politician.

Outlook for the Future

Most known water problems can be solved on the basis of our present capabilities for addressing them. The problem is that constraining influences often force the wrong moves, ineffectual moves, or no moves at all. We have the analytical power to identify efficient and environmentally-sound alternatives, but we have little ability to move special interests, whatever they may be, to compromise their kingdoms no matter how compelling the argument. Water issues that became critical in the past were not unrecognized in advance; they were ignored for political and/or other reasons until they became crises. It is a sad commentary that we do not seem to be able to learn the lessons of the past. Problem-solving under a crisis is destructive of both natural resources and the Nation's economy. Perhaps fortunately, we have overcome most historic calamities within reasonable periods of time through the massive application of resources. The problem is that as our resources are increasingly spread thinner, and as the number of people to be served and/or protected increases, a problem that could have been accommodated 20 years ago with some ease might now result in a national catastrophy, one which could not be overcome quickly or without great human suffering. We can keep on as before, or strive to make the changes that are needed to permit wise management of our water resources. Hard choices will have to be made if we are to move from the status quo, but the alternative is foreboding. The severity of water problems we face in the future will depend heavily upon our ability to change intrenched institutional elements and to introduce **objectivity** into water resources management. Unquestionably, management cannot be effective without some degree of control; and to permit that control, adjustments by governments and individuals will have to be made. On the other hand, reforms do not have to be all-destructive of old beliefs or approaches; they can be built upon them as was done for the Potomac. What is needed is a futuristic approach with a wide focus, blended with the physical and social elements already in place.

Perhaps at this point it might be appropriate to review the seven themes of the 1973 National Water Commission report. They get at the tough issues even though many have argued about the Commission's recommendations for addressing them.

- First, the report emphasizes that the level of future demands for water is not inevitable but derives in large part from policy decisions within the control of society;
- A second reoccurring theme is the shift in national priorities from development of water resources to restoration and enhancement of water quality;
- A third theme is the Commission's belief that water-resource planning must be tied more closely to land-use planning;
- Fourth, the Commission recommends policies which will lead to the conservation of water — policies which will motivate better use of water and reduce water losses by improved efficiency;
- Fifth, the Commission believes that sound economic principles should be applied to decisions to build water projects;
- Sixth, the Commission believes that laws and legal institutions should be reexamined in the light of contemporary water problems; and
- Seventh, the Commission believes that the development, management, and protection of water resources should be controlled by that level of government nearest the problem and most capable of effectively representing the vital interests involved.

For the most part, these themes are still current and are reflective of today's needs.

Some Closing Notes

The basis for tomorrow's actions has long been identified. It has been pointed out that policies established by the Pick-Sloan Plan supported

- "Intelligent use of resources;"
- "Maximization of water use in a physical sense;" and
- The concept of "one river basin — one problem."

These are sound notions and they chart the future as well as the past, but they have not always been followed. The current ETSI controversy stands as a clear example of fractionation. In the future, we are surely going to have to pay more for our water. And we are going to have to set aside some of our selfish attitudes. The "pioneer spirit" mentioned by Paul Harley is needed today — no longer to aid in settling the Missouri River basin, but to seek innovative and imaginative paths to follow in solving the water problems being faced. The challenge is no less today than it was years ago; in fact, it is probably greater. But if it can be met, there should be sufficient good water for today's and tomorrow's water uses.

Finally, it seems to me, that the focus for those concerned about the future of the water resources of the Missouri River basin should not be on fulfilling all of the incomplete elements of the original Pick-Sloan Plan, but rather on exploring the contemporary needs of the basin and determining how existing facilities and new development can be forged into a dynamic, modern program, one that is in step with the time and recognizes and wisely builds on what we know today and what we perceive for tomorrow.

CURRENT AND FUTURE RELATIONSHIP OF THE STATES TO THE PICK-SLOAN PLAN

Mr. Warren "Bob" R. Neufeld, *Secretary,*
South Dakota Department of Water and Natural Resources.

The title of my presentation is the Current and Future Relationship of the States to the Pick-Sloan Plan. It would be extremely presumptuous of me to stand here and try to tell you Missouri's relationship to the Pick-Sloan Plan or Kansas' relationship to the Pick-Sloan Plan. In fact, I'm not sure all of the states in the basin have a very firm notion of their relationship to the Pick-Sloan Plan; if they did, we wouldn't be holding this conference. It's obvious that people need to know more about it; what it means for the future. I do believe, however, that if any of the states in the basin have a firm idea of what they want to accomplish, what needs to be accomplished, what those goals are, and how that can be done through the Pick-Sloan Plan, I think the State of South Dakota has certainly come of age in the past.

In my presentation, I would like to give you an example of our struggle with the Pick-Sloan Plan and what it means to us. I'd like to identify for you the problems as they existed in the past and which problems, for us, exist today (and they are the same). I'd like to talk about the solutions to those problems that were proposed in the past, how those have been transformed and metamorphosed into solutions for today. What happened to those solutions in the past that made them unacceptable in South Dakota, how did we solve the problem and where do we go from here? One of the themes of my presentation and my philosophy is that . . . we went through a birth analogy yesterday with regard to the Pick-Sloan Plan and it's apparent that everybody had to learn to crawl before they could walk, and they had to walk before they could run. We believe that the states are in the position where they ought to be running. There was a strong federal emphasis in all of these proposals. If you look back at the gestation period comments given by Paul Harley yesterday, you will find, in my opinion anyway, that the true conceptualization of what needed to be done from a basinwide standpoint was not a federal concept. It originated in that meeting that was held in Bismarck, North Dakota, where Judge Clifford Stone said you've got to look at a basinwide concept, and if the states don't hang together they shall surely hang separately, to paraphrase Benjamin Franklin. I feel that what we're going to be talking about here, in my remarks, is how a state comes of age. To carry the birth analogy on a little bit, and I think that you're going to find if you look back at those comments that were made yesterday and the actions that were taken at our Board of Directors meeting yesterday that the birth analogy is quite appropriate. In fact, sometimes I think resolving interstate water problems in an area, such as the Missouri basin where you go from 12 inches or less of rainfall a year to states with an average of 40 inches of rainfall a year, is a bit like mating elephants if you will carry the analogy a bit further. It tends to be done at very high levels, and it takes a long time to get any results. That was a joke, folks. If I appear a bit nervous, I want you to understand that it's not the most convenient thing in the world to be the last speaker before lunch, nor is it my idea of an ideal presentation to have your boss send a video camera down to keep an eye on you. I can no longer say that I was misquoted in the press.

If you look at the problems that were going to be resolved by the Pick-Sloan Plan in 1944, look at the Sloan document, Senate Document 191. This is the description, if I can read some paragraphs from that Document, that was given by the feds of problems that they saw and that needed solution in the basin. That document said:

> *Man cannot prevent the sudden downpours nor the quick thaws that produce floods, he can only distribute floodwaters in time and place and so reduce their destructive powers. He cannot prevent drought nor make rain fall at will, he can only store water for use in dry seasons and thus escape its worst effects. The plan proposed here recognizes these facts and also the fact that in order to make the waters of the Missouri basin serve the greatest number of people, to the greatest advantage, those waters must be conserved and used according to a coordinated plan, which must recognize all beneficial uses of water, weigh their relative values and make a compromise from a basinwide viewpoint in each instance of conflict.*

Going on further, the document said:

> *This basinwide plan provides for a number of reservoirs on the upper reaches of the Missouri*

> *River and its tributaries for the purpose of storing water and releasing it during periods of low flow. Such reservoirs will contribute to flood control, not only on the lower river, but at all points from the mouth of the river to the reservoir sites. They will aid in navigation on the lower river by reducing flood damages to navigation works and by increasing the dry season flow. They will enlarge the supply of water available for irrigation and they will make practicable the generation of electrical energy at many places.*

In the next paragraph they came right to the heart of at least my state's problems in 1944.

> *The irrigation of land in the basin, generally in relatively small blocks along the streams, will add to an unavoidably precarious dry farming and grazing economy, a dependable type of agriculture which will have a stabilizing effect on whole communities. It will supplement the ranges in supporting a larger, better, and less hazardous livestock industry; and by increasing the population and the farm yield and income, it will reduce the per capita cost of government and raise standards of living and of citizenship. In periods of severe and long continued drought, such as have occurred at long intervals and may occur again, forage raised on irrigated land will support foundation breeding stock at least, and so speed recovery from drought damages.*

My thesis here today is that that is exactly the same problem that's facing the upper basin states with their agriculturally based economies. To wit, I'd like to cite some statistics from South Dakota during the 1970's. South Dakota is a state that probably is more dependent upon agriculture for its economic livelihood than any other state in the union. We don't produce the crops that Iowa produces and we don't have all the cattle that Nebraska has on feed, but approximately 20% of our personal income, according to Bureau of Economic Analysis and Census data, is earned on the farm. Iowa stands at approximately 11%; the national average is 3%. We are more dependent on agriculture. The important thing about that, though, is that about 60 to 80% of our total agricultural receipts come, not from crop sales, but from the sale of livestock. We are a livestock based agricultural economy, and we run into drought periods when we don't have available the feed that used to grow on the bottom of the Missouri River before it was flooded. We have to sell off our livestock at reduced prices and then we try to build those foundation herds again when the good times return. In 1975 the cattle population of South Dakota was approximately 4,950,000. By 1977 that was reduced to 3,650,000, or a reduction of 26% in all the cattle numbers in the State of South Dakota.

Our producing herds took an even larger dip, from 2,000,000 down to 1,400,000, a reduction of approximately 35% in our productive capacity. That's essentially the same thing as Ford Motor Company closing down and disassembling 35% of its automobile plants every time it runs into an economic recession. Corn production in South Dakota dropped from an average of about 56 bushels an acre on dryland farming prior to 1975 to 31 bushels per acre in 1976. Alfalfa production dropped to 8/10ths of a ton per acre in 1976. Farm proprietors' income in 1982 constant dollars went from $1,054,000,000 in 1974 to $273,800,000 in 1976, a drop of 74% in farm proprietors' income. In 1981 that had only recovered to $414,000,000, approximately 40% of its 1974 level.

In 1973, we were 21 in the Nation at approximately the national average in per capita income. In 1976, we dropped to 46 in the Nation in per capita income, and our per capita income was approximately 80% of the national average. In looking at the problem in the '40's, the Bureau of Reclamation used these same type of statistics to justify the need for the projects they were proposing in the upper basin. One of the reports; in fact, a letter from Commissioner Bashore in transmitting this document said, "The droughts of the last decade cost governmental agencies, principally Federal, a total of $1,246,557,087, and these expenditures were inadequate to the needs, since tens of thousands of families nevertheless were forced to migrate from their abandoned homes. These expenditures are roughly equal to the cost of the full utilization of the waters of the Missouri River system. While it is not contended that full use of these waters will eliminate drought losses, it will reduce the catastrophic effects and prevent much of the human suffering."

In South Dakota, between 1972 and 1979, Federal Crop Insurance payments related to drought were approximately $18 million total. Farmers Home Emergency disaster loans totaled $500 million over that same period; and over the five years between 1974 and 1979 for which I have data, disaster payments for livestock feed and other purposes were $195 million, or a total of approximately $713 million of federal aid related to drought in South Dakota between 1972 and 1979. U.S. Department of Agriculture has estimated

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that in 1976 our drought related crop and livestock losses were $1 billion. In 1980 we suffered $600 million in similar losses to our economy. So the problem really hasn't changed.

The Bureau went on to talk about specific areas and specific counties. In fact, they almost waxed eloquent in describing some irrigation projects in the western part of the state. They said, "This irrigation development appears to be the major possibility in stabilizing agriculture in the basin. It will furnish a reliable feed base for the maintenance of grazing herds adapted in size and quality to the enormous range areas", and get this, "surrounding the necklaces of irrigated farms along the mainstreams." I've never heard anybody that works for the Federal Government talk in those terms since.

The Bureau then turned to Ward County, North Dakota, for which statistics were readily available. In the year 1938 to 1939 in Ward County, North Dakota, there were total charity expenditures of approximately $1,200,000. They estimated that the total crop value in that same county during the year was approximately $1,700,000, just roughly more than what was paid through charity expenditures for relief to the poor. Livestock sales were about another $1,000,000, or per capita gross income for that county in North Dakota during that year of $83 per person. Even in 1938 that wasn't a whole lot. They went on to look at six counties in what was then the Missouri-Souris area. They said that in that period of time there was a failure rate of 31%; that is, of all the fields seeded and planted, 31% were never harvested. Livestock numbers in 1934 in those six counties in the Missouri-Souris area decreased by 47.2% for cattle and by 35.2% for sheep and lambs. The population in all areas between 1930 and 1940 in those six counties was decreased by 21%; the farm population decreased by 29%.

Let's look now at a project area in South Dakota called the CENDAK area, which includes seven counties in the central part of the state. The precipitation for the 1970's in that area was this: in 1973 the precipitation was 9% below the historical average; in 1974 it was 31% below the historical average; in 1975 we lucked out, it was 7% above the average; in 1976 it was 54% below the average. We do not have data for 1977, 1978, and 1979, and in 1980 it approached 14% below the average. A long period of sustained, below-normal precipitation. The federal aid in those counties, and not on a statewide basis for the same period, including insurance programs, disaster loans, and disaster payments, was $110,000,000 in these counties alone. The per capita farm income in that period increased 81% between 1973 and 1976. The total farm gross revenues decreased from $244,000,000 in 1982 dollars to $40,000,000 in 1982 dollars, or 83%. The farm population in the CENDAK area between 1970 and 1980 decreased 34% and the total population decreased 5%, indicating a shift from the farms to the cities. The number of farms in the CENDAK area between 1969 and 1980, the two years that I have data for, decreased by 20%; the statewide average in South Dakota was a 16% decrease in the number of farms. What we see here in these statistics is the fact that the needs, and this isn't necessarily true for every state in the basin, but the needs from the Pick-Sloan Plan today are, in our opinion - in the State of South Dakota's opinion, almost essentially the same as they were back in 1944. The solution at that time was the authorization of 972,500 acres of irrigation in the 1944 Flood Control Act. Of that, 750,000 was to come out of the Oahe Reservoir. In fact, one reason for building the Bureau proposal for the Oahe Reservoir instead of the two smaller dams at Oahe and Oak Creek as the Corps of Engineers had proposed, was to provide storage for that 750,000 acres of irrigation in one dam. It was to take Missouri River water, provide municipal water supplies, provide some wildlife enhancement, and some recreation (those kinds of things that make the quality of life better), and hydropower. What went wrong?

I think if you look at the history of water development in South Dakota over the last decade, you will know that the state probably went through some of the most tense and difficult internal political battles it has ever seen, probably since statehood. We have had violence in the areas where the irrigation projects were to be built, threatening phone calls, threats made to the persons and bodies of families of people who were proposing the irrigation development, and I walked into that in 1979 and was supposed to straighten it out. I think what happened . . . some say that there were wildlife reforms. The old Oahe unit was envisioned as being a wildlife enhancement project. There were going to be refuges of the open water type along the storage reservoirs within the project. Between 1944, when the project was originally authorized and conceived, and 1970, when construction was initiated, notions of what was good for wildlife in the country changed. We were worried about potholes at that particular time, and it was determined that any project that would drain a pothole had to replace it by reclaiming a privately drained pothole someplace else in the state. We ended up with people not even near the project area who were going to have their drained potholes filled back up with water in order to mitigate wildlife losses within the project area. There were environmental requirements that were tacked onto the project, environmental impact statements, and water quality standards that didn't exist at the time the project was conceived. There was land acquisition. A project was going to cross people's land who weren't going to get water. They didn't want canals in their backyards. Essentially, I think that if the project had been built in 1944 it probably would have been a good thing for the State of South Dakota; and if it were built in 1968, I don't think anybody would create a move to take it out, but what happened between 1944 and 1970?

It's just the passage of time. We had, if you will excuse the expression, 'the same old horse' but we put too many bottoms on the plow and it wouldn't pull the load any longer. During 26 years from authorization and conception to construction of Oahe, the project itself, in my opinion, simply became an anachronism. Land ownership patterns had changed in the State of South Dakota. Society did not stand still waiting for the appropriations to come so that that project could be built. The needs were the same, the legislature of the State of South Dakota was firmly behind the concept of irrigating our lands, but the particular means of accomplishing that did not go ahead.

In that period of time the Oahe project had dwindled from 750,000 acres to an initial stage of 190,000 acres. I think that we need to look back to one of the principles that Clifford Stone told the Missouri River States Committee. It was the principle *7 that Mr. Harley talked about yesterday, and that is, that the projects that are designed have to remain flexible to meet continuing and changing needs of society. How did this happen? How did the project get to the point where it was no longer politically acceptable within the State of South Dakota? The congressional delegation, the Governor, and the legislature couldn't correct these things. We all knew we wanted irrigation, but we couldn't do it with this particular project. I think if you go back to the conception of the Pick-Sloan Plan, as I stated, it was essentially the states that wanted something done. It was a basinwide concept. It was touched on by the federal agencies, but each of them had their own idea of what basinwide meant. The Corps was emphasizing flood control and navigation, and the Bureau was emphasizing hydropower generation and irrigation. It was the states that managed to eventually force a marriage of those two plans, or the 'political miracle.' But after that occurred, and after the projects were authorized, I think the states fell asleep. I think they sat back and let the Federal Government carry the load. The Federal Government had the expertise, they had the money, they had the technical know-how, and the state planning agencies related to water development took a back seat to all of this. It amounted to actually an abdication of power on the part of the states, and the federal agencies rushed in to fill the vacuum.

How did we correct that? With respect to the State of South Dakota, and I think that Joe Marcotte at least, and probably the General, will agree that the State of South Dakota knows where it's going with water development. That doesn't mean that we get along with the federal agencies all of the time. Every time Joe and I get together we roll up our sleeves and have an arm wrestling contest and we decide who is going to win the discussion that day. But we walk out friends and I know that Joe likes two olives in his Martini, and I don't drink at all. What we did was we strengthened our state water planning effort. We recognized that if we were going to solve the political problems with water development in the State of South Dakota, they had to be solved at a local level. We went back to the local people and we asked those who were willing to fulfill the statewide goals of providing irrigation and a stabilized feed base for our livestock herds, to please step forward and we would try to assist them. This took a great deal of money and a commitment. When the Title 3 funding from the Water Resources Planning Act of 1965 was cut, and our water planning budget was going to be cut approximately in half, the legislature went ahead and picked that up totally, and we have since increased our funding. Our water planning and development budget in the State of South Dakota is about $700,000 expended annually, all of state funds. That is just the operational budget. In addition, our water regulation office which determines when people can use water so that they don't interfere with each other, that's about $800,000. The Geological Survey in our state, which is used generally for assisting in ground water studies for this kind of development, has a budget close to $1,000,000 with respect to water analysis. So the State of South Dakota is committed to water planning, regulation and development to the tune of $2,500,000 a year. That's a substantial commitment in a state whose total state budget is approximately $300,000,000 a year; and with all federal funds, we're about $800,000,000 a year.

We had to get into a result-oriented process; one that was project based. We had to identify projects. They had to be locally driven and sponsored, and we had to be sure that the water action that we took met the needs of the local concerns and the local sponsors. But we still need the help of the feds, and this is where our struggle with the Pick-Sloan Plan really begins. We had to have meetings with the federal agencies, and we had to tell them, "Look, if you're going to be in this area, and you want to do the things that are necessary to get water development moving, you have to do it according to the priorities and the schedules that the state sets out. If you are operating in South Dakota and you aren't doing one of two things, either satisfying a congressionally declared national priority, or satisfying the water development needs of the State of

South Dakota as they are perceived by the state, you don't have any business operating in the State of South Dakota. We want to take part in your planning process and establishing your budget. We want to have something to say about what feasibility studies you're going to undertake, and we want to have something to say about where you're going to propose to spend construction funds in this state." It was a very long and hard struggle. I think we've gotten to the point where we're cooperating with the federal agencies, and we are now all 'singing off the same sheet of music', if you will.

My advice to those states that feel that the Pick-Sloan Plan offers some advantages to them is to try the same process. I'm not saying that you have to irrigate — irrigation may not be what you want in your state. But if you are interested in designing flood control reservoirs that are satisfactory to local needs, you have to be willing to spend the money to develop your own planning information and develop and interpret that from a state viewpoint. You have to do it in a manner that's going to convince the feds that all of their national planning standards don't necessarily satisfy needs that are going on within the state. That's essentially how we view the Pick-Sloan Plan at this point. We see it as a means of accomplishing state-driven and locally-sponsored goals.

What next? Well, I think South Dakota has the Pick-Sloan Plan pretty well in hand. It's going to depend on whether or not some of these projects I've been talking about - CENDAK, extending the Garrison project down the James River into South Dakota, and the Lake Andes Wagner unit along the Missouri River in the southeast corner of the state, are going to be authorized by Congress for construction. That's something that is off in the future somewhere, and while I'm preparing for it, I'm not sure that it means a lot to the other states.

But the fact of the matter is that there are uncompleted projects and there may be changing goals in other states. My counterpart, Mr. Crews, was quoted in the paper the other day as saying that we've taken the Missouri River and changed it into a ship canal, or something of that nature. If the State of Iowa can make the political decision that perhaps something ought to be done to change that aspect of the Missouri River, we stand ready to help. I don't believe that there is any reason, any reason at all, that if the states can get together and determine that "Yes, there is water for this purpose," then there shouldn't be a Pick-Sloan project before the United States Congress that doesn't have 20 senators from the Missouri River basin voting for it.

If Iowa wants to create a wildlife refuge along the entire Missouri River and its borders, South Dakota stands willing to help, politically and with technical advice, but we have to stop this bickering and we have to continue the process that we initiated with the Missouri Basin States Association. The states have to take the leadership role, they have to be able to say to the Federal Government, "You're here to satisfy our needs, not to satisfy the needs of the federal bureaucracies." Now I'm not saying that the Corps of Engineers has nothing to say or should have nothing to say about the operation of those dams. They are the only agency that can operate them for flood control purposes and for navigation purposes. But to move the Pick-Sloan Plan along, we have to go back to the basics. We have to determine what it is the states want, and we have to determine how it is the states can agree on fulfilling each other's goals.

There's a joke I heard a while back, and you're going to hear Mr. Carruthers speak later this afternoon. This joke is from his predecessor, and it's probably the only interesting thing I've ever heard that gentleman say. We keep talking about birth and gestation. I want to back up just a little bit before that whole process. There's a saying out in the West — "When you get west of the 98th meridian, water and sex are a great deal alike. Each of us thinks that there's a lot more of it going around than there really is, and every single one of us thinks that the fellow sitting next to us is getting more of it than we are."

I think this kind of suspicion and jealousy within the basin has got to stop. We have more to gain by working together in a period and time when federal funds for water projects, whatever the purpose it is that we want to fulfill, are getting harder and harder to obtain. By continuing this bickering, we are only satisfying the needs of those who do not want to go ahead with water development and are hurting ourselves. It's up to the states to determine how to do that, and the Pick-Sloan Plan provides a perfect vehicle to accomplish our goals if we can determine that the states are, in fact, in agreement on what needs to be done.

It's been a very real pleasure standing here. I'm two minutes over time, and I hope you have a very pleasant lunch. Thank you very much.

LUNCHEON ADDRESS

CONGRESSIONAL PERSPECTIVE OF FUTURE U.S. WATER RESOURCES DEVELOPMENT AND MANAGEMENT

The Honorable John Myers, *U.S. Representative, Seventh District of Indiana, Ranking Minority Member on the Subcommittee on Energy and Water Development of the House Appropriations Committee.*

Thank you, Bill, for a very generous introduction. I have heard nothing but compliments on the tremendous program you had yesterday. I am sorry I wasn't here to hear about the progress on Pick-Sloan and some of the other individual projects which you have in your areas. Having served on the Appropriations Committee for the past 15 years, I have learned indirectly and heard about all these programs for the last 15 years. But, I understand you gentlemen went back a few years before that. There is a lot of work to be done ahead.

I am particularly happy to be invited to be with you today and see my friend and former member here, John Cavanaugh, and a number of others I have known through the years. There are a great many of you here who have testified before Congress through the years. It's kind of like coming back home coming out here to Des Moines. And it wasn't easy getting here this morning, I must tell you. I live about 75 miles west of the Indianapolis airport. I got up this morning shortly before 5 a.m. and planned to leave shortly after 5, but it was raining. Something we have kind of forgotten about in our area like you have in yours. And it wasn't familiar. I left without a raincoat and I remembered I had one in the trunk of the car I keep at the airport; but as I was driving to Indianapolis, progressively the rain became more intense and by the time I got to the airport, it was a cloudburst — lightning, the radio station I was listening to was knocked off the air a couple of times. So we're having good weather in Indiana. Lots of rain.

Water --- H2O. It's rather a simple formula for water. Yet, we haven't found a way to reproduce it. We can generate it in various ways, some very expensive. But we really don't know how to put two parts of hydrogen and one part of oxygen successfully together economically so we can produce that commodity, water, that so many of us take for granted. Now this water here looks simple enough. But someplace, somehow, someone has to make sure that we in society have this water for its various uses. And we take so many things for granted that a little thing like water we say, "Gee, it's always going to be here."

I have been in Congress a few years; and I recall back a few years ago when I first went to Congress, there was ample supply of energy in our country. And there were those who were wiser than some who predicted the energy shortage, the energy problem our country was going to run into. Some of the members said, "Our country couldn't run out of energy. With all the coal, natural gas, and the various types of natural resources we have that produce energy, how could this country run short of energy?" But we did and we have. We need not have, but we ran out of energy because we didn't have the courage to use the energy or to prepare for the future growth of our country. Consequently, in the early '70's we ran into a major energy problem, and we are not out of it yet. But the next problem area we are going to have is right here, H2O. Now, this glass of water must be about six ounces. If that were representative of all the water on the earth, and we all know the earth's surface is more than two-thirds water. But if this were all the water on earth, this (demonstrates with teaspoonful of water) is all we would have available to us. Less than 3 percent of the earth's water is fresh water we can use for our needs. The rest is locked up in various areas, either much deeper than we can reach, but more often than not, it's in areas where we can't use it or it's in ice we can't use. So this little spoonful is pretty important to us. Look at all the water here, but just a spoonful is all we have.

Since World War II, we have seen the water consumption in the United States more than double per capita. Now, we aren't drinking any more water, our population hasn't grown that much, but the needs for municipal and industrial water, as well as agriculture water, have increased and from all indications, it is going to continue to increase, creating a greater demand on our Nation's limited water supply. We know we use water for a great many purposes. Municipal and industrial water, of course, is the largest consumer. Agriculture today is a huge consumer. In my area, we don't irrigate a whole lot — I wish I had this year. But, in the areas some of you represent, there is much irrigation. But there is increasing need for agriculture water. Navigation is also part of your concern. In my judgment, we probably are going to see more navigation by water in the future. We're using it in many other ways now. We are concerned about transportation, not transportation over the water but pushing coal in a slurry through a pipeline instead of boxed in a gondola or trucks. We are developing research in this area. Coal slurry. Taking huge sums of water. Every type of alternative source of energy we have today uses more and more quantities of water. Some of the exotic uses of energy, such as solar, that we hear so much about these days and see little of and that uses more water probably than a coal fired generation station because they have to cool it and it takes a little longer. So every area of future energy needs where we see larger quantities of water being needed, we also know that the water we have we are going to have to conserve and use over and over. There is a limited amount of water in spacecrafts. They use the same water over and over. Through reprocessing. And really that is what we are doing on this space vehicle of earth. We're using the same water over and over but we aren't very wise in the use and conservation of it.

You have asked me to make somewhat of a prognosis or prediction of what government is going to provide for the future. I wish I could tell you. I wish I had a crystal ball. But up to this point, we have really done little as far as the Federal Government is concerned. We have given most of the responsibility for providing the water to state and local government. We really do not have a national water program. There are some who are advocating that, but I don't think we are quite ready for that yet, politically — I don't think we have the political courage yet in Washington — nor have we really shown the need.

HONORABLE JOHN MYERS
U.S. CONGRESSMAN, SEVENTH DISTRICT OF INDIANA

Mr. Myers is a lifelong resident of Indiana's Seventh Congressional District. He graduated from Indiana State University in 1951 and was employed in a foundry and farmed before pursuing a banking career. He served as Cashier, Trust Officer and member of the Board of Directors of The Fountain Trust Company before his election to the U.S. House of Representatives in 1966.

As one of few Congressmen with a farming background, Mr. Myers started his congressional service as a member of the House Agricultural Committee and later was appointed to the Agricultural Appropriations Subcommittee where he continues to serve. He also serves as the senior Republican on the Appropriations Subcommittee on Energy and Water Development. As a member of the House Appropriations Committee since 1970, Mr. Myers is known as an advocate of economic growth, resource development and fiscal restraint.

If we look back at the United States, we have been reactors. We react after we have a problem. The water problem is not acute enough. It's not wide spread enough yet that we have enough members in the Congress, either the Senate or the House, who are acutely familiar with the needs of water. So we haven't really prepared or have a national water program. The closest we came to having a national water program was the Water Resources Council. I was for the Water Resources Council a few year ago because we needed a body like that in the Federal Government to be the coordinator, the catalyst, to bring all the water resources needs together. They are still around, but we have pretty well pulled their teeth. We need a catalyst like the Water Resources Council, but the executives — particularly President Carter — gave them much more authority than Congress ever intended. They became a veto power. We could not do anything unless it was approved by the Water Resources Council. They wanted to tell the Congress which programs would move, how far they would go, how they would go. They didn't want us to consider any authorizations unless they, the Water Resources Council, gave their approval. This was wrong, so for the last three years we have gradually phased out the Water Resources Council. This last appropriation, I hope, is the last.

We now need something similar to that. Today we have an ad hoc group made up of some members of the Department of the Interior, — I suspect Garrey will talk about that this afternoon — the Department of Agriculture, the Congress, the Executive branch — the President's office — who do get together and meet periodically to review the water needs. But they have no authority or stature as far as the law is concerned. We need some program like this, and I will speak a little later about this.

Most of the Federal Government's involvement has been research. We are a great country to research. We make plans and study them but we are slow movers. This reminds me of a colleague of mine who had a young intern come to his office. The young intern was concerned with how congressmen handled their constituents. He wanted to know everything about the office. He asked the congressman if he could listen in sometime and see how he handled his constituency. The congressman said, "Sure, you just sit over in the corner and listen." The first constituent to come in was a pro-abortionist and gave all the arguments about why we needed national abortion money, national abortion plans, etc. The congressman shook his head and said, "I agree with you." So that constituent left and as luck would have it, the next constituent in was anti-abortion. The Federal Government should stay out of it entirely. The congressman listened and said, "I agree." After the second constituent left, the young intern said, "Congressman, how could you do it. Back home, you are the pillar of your society. Your integrity is impeccable back home. Yet I heard you here with two people who completely disagreed with each other and you agreed with both of them. I don't know how you can sit there and do that." He said, "I agree with you."

Unfortunately in government we have too many people who, though they agree, don't do anything. I don't think we can wait much longer in water or we're going to be entirely out of water for the future. Today we are studying how we can seed clouds — we've been studying it for years but we are concentrating on how we can seed higher in the atmosphere to get the clouds down on a level so we can seed them with dry ice and cause a rain when we need it as we do right now. It's expensive and so far we haven't really developed a plan to get the clouds to move into an area so we can seed them.

One of the other areas I spoke about is the huge amount of water on earth, a lot of it saltwater. Most of it, 97 percent, is. Desalination — we know how to do it now. Our Navy does it. We have some desalination plants over the world, but it is extremely expensive and a big consumer of energy. And with the high cost of energy, it isn't economical to desalinize the sea water. Yet we may have to come to that. We do have studies now to develop a cheaper way — solar is one of the ways we are now working in desalination.

In one of the areas I spoke about, conservation, we are studying storage facilities — where we might store water so it can be used at a time when we're short of water. We're trying to develop cheaper and better ways to store water. One of the problems we have, of course, is evaporation. Very necessary, but yet they estimate that Lake Mead may lose as much water through evaporation as it holds in one storage. We have developed a process using a chemical to dramatically reduce that evaporation. But it has its tradeoffs. As farmers know, you don't have rain unless you have evaporation. So you can't have less evaporation or you get into trouble. At Purdue University, and I am sure at Iowa State and other land grant colleges, in their Departments of Agriculture and Science, they are studying plants and developing plants that have a better resistance to drought. We are also studying plant transpiration. We are trying to develop plants that don't require as much water. But these are all areas of research that we are trading off. We are not really developing or keeping water. We are trying to resolve the problem so we won't need as much water. But ultimately if we're going to solve the problem, we're going to have to develop a better system of perserving our ground water and our surface water so when we need it, it will be available.

In the past five years, we have had no water projects authorization bill. I think you have heard that the Authorizing Committee has marked up a bill now and reported it out. It contains a great many new projects throughout the country as its now been reported by the Authorizing Committee. It would be the first new comprehensive bill out for the past five years authorizing new projects. However, it's not through Congress yet. I'm not sure it ever will, quite honestly, but I hope it does. By the time it gets through the various committees, it will be late this year before it ever gets to the floor of the House. Then it has to go to the other body, and I don't know if it will ever see the light of day there. It is a very large bill. It provides for a new way of financing. We have been hearing something about alternate ways of financing these projects, which I am going to speak about shortly. At this time, I don't think the alternate sources of financing are acceptable to the Administration. In any event, it is an authorizing bill, and I hope it will get through because it has some programs for new starts that simply have to move. We have several key programs, ports, etc. that are in that bill. We have not had one new start in the Corps of Engineers and only two or three in the Bureau of Reclamation in the last five years. We are now looking at a list of about 60 prospective new starts that we may introduce in September when we go back, and the appropriation bill for new starts will probably be equally divided between the Bureau of Reclamation and the Corps of Engineers. But we simply have not had the money. We had a time with the Carter Administration when they were not in favor of new starts. This Administration has not seen fit to recommend any in its budget until last year. But with the recommendation for new starts last year in both Bureau of Reclamation and Corps of Engineers projects, it carried the alternative financing which required local government to participate more heavily in the financing. That was objectionable to many communities, but we are ready to move on it so I hope later this year we will be able to have these new starts authorized and get started.

But, what can we look for in the future? We're not going to have any future unless we develop a new alternate source of financing. That means people like you here are going to have to go back and work with your governors and legislatures. As I remember, Pick-Sloan originally was to be paid off locally by the users of the irrigation and the flood control and so forth. I think both parties now pretty well accept the concept of more local participation but as to the actual formula, there is a wide difference of opinion just how much local government can and should pay. We are going to have to go back and work with our state legislatures to work out the financing among the users, whether it be irrigation users, power users, municipal and industrial water users, or farmers who are concerned about flood control. So there will be participation by local entities in the financing. I don't think there is any question but that the future is going to have a more heavy involvement and contribution by the local sector matching with the Federal Government. This I think will be most necessary as we move into it.

I think we are going to have to have more groups like yours. I was sorry to see the Commission deau-

thorized in 1981, because I think we are going to have to have more commissions as we get state and local government involved more. But I compliment you for picking up right away with your Association because that is most important. I think in a few years you will get your commission reestablished, because I don't see any alternative but to have more local participation groups like your own here. I am pleased to see your legislators here, your governor here yesterday, and I know some of you are here at the blessing of the other nine governors in your respective states. This is most important. We're probably not going to have the Federal Government move in as we have in the past with massive federal projects in navigation and flood control. We are going to have more local involvement. That means you have a job here in getting your local government sold. I know I have a big job in Indiana selling my governor and legislature. In fact, I may have to go back and run for the legislature if I don't get anything done. I kid Mark (Sisinyak) and his colleagues about my serving on the Appropriations Committee for Energy and Water and I can't get any water for Indiana. Except we got some last night.

In any event, I think this is the way we will build for the future. It's going to be a different concept. We need more Picks and Sloans and more leaders like your speakers here yesterday who will take an active role and take the bit in their mouths and run with it. It's going to take courage and a lot of hard work. We're not going to do it entirely by coming to meetings like this. But these are important because we need to pull together. I might add here that as far as the Bureau of Reclamation and irrigation is concerned, you've got a job to do selling Congress because a lot of my colleagues don't see the necessity today to spend money in the western states to irrigate land when we have a surplus of grain already. So you have a job to do. The ten states need to get together just a little bit more than you have in the past.

In Washington, I hear a little bickering among states. But we can't afford to do that. When rural areas represent less than four percent of our population, we can't afford to divide that four percent. We need to incorporate the cities into our water needs. This is where you in this room need to go out and talk to the chambers of commerce in your respective areas, talk to the service clubs, develop a slide show. Do these things we just haven't done. We have felt in water resources and the development of water resources that we were right. Back home we know you need that water, that irrigation. We know we need these things, so we don't understand why people don't see it our way. But we have a selling job to do and that puts the responsibility on you here. You can't just look to Jim Abdnor or your representative in Congress, or your state legislature, or your governor to solve the problems by themselves. We have to do it back home on a local basis. This is what I hope I leave with you today, if nothing else. Yes, I compliment you for the job you have done and are doing today, but the job doesn't end today or next quarter when you meet again. We've got to go back home and sell the people there. We've got to do a selling job, present the product. We have a good product to sell, but we haven't done a very good job in presenting it. This is what I urge you to do. Work on your legislators and congressmen.

Sometimes in water need areas, your congressman doesn't vote with us. We have one other problem. They want to pick and choose. They say, "I will vote for the project in my district but I'll vote against everyone elses." If we all did that, we wouldn't have any progress in our country. We wouldn't have anything, we wouldn't have the national highway system we have today or the navigation system we have today. There would be areas entirely devoid of water. We almost have some in California and Arizona now. But we would have all of them without water if each district voted their own concern. So we've got to pull together. This water, as little as it is, is so valuable we just can't get along without it. It's impossible. It means that you and I as stewards of today's water and hopefully as workers for tomorrow's water, must be farsighted but most importantly, we have to be hard workers and courageous in our convictions.

Twenty-five years from now I hope everyone is still alive in this room. If you're in your rocking chair watching "Superman 25" or whatever it may be by then and your grandchild or great grandchild crawls up in your lap and says, "Grandpa, or Grandma, is it true when you were a child that you could water your lawn or flush the toilet every time you went to the bathroom, or that you had water that you could wash you automobile? Was there really that much water back then?" That question could be asked you. It's our charge today, both yours and mine. Mine in Congress to vote for what's right and have the courage to vote that way. But I can't do it alone. I need you people back home. The organization you have here carrying it back home and telling the story if we are going to tell those great grandchildren that yes, there is plenty of water yet today. We didn't use it all and didn't abuse it. We prepared, we had the insight and courage to leave some water and do the things that needed to be done. It's not easy but it has to be done.

I appreciate the opportunity to be with you today and to talk a little about water needs. The job you are doing is very necessary. I compliment you, and particularly, the leaders who put the Pick-Sloan together back a number of years ago. The whole concept isn't done yet.

I will close with a story Billy Graham often tells. When he was a young evangelist, he was touring Europe and wasn't well known back then. He attended the Church of England, which is similar to our Episcopal Church as far as what goes on in the church. He was sitting in the back row and every so often in the ceremony, Billy Graham would say, "Amen. Amen." Finally an usher came up and tapped him on the shoulder and asked him to be quiet. Billy Graham said, "You don't understand. I have religion." The usher said, "Yes, I know, but you didn't get that kind here." So I don't know what you got here, but you already had it so I didn't need to bring you anything but congratulations and compliments on your fine work. Good luck to you.

THE FUTURE OF ADDITIONAL PICK-SLOAN MISSOURI BASIN PLAN DEVELOPMENT

The Federal Administration Perspective

Dr. Garrey Carruthers, *Assistant Secretary of the Interior for Land and Water Resources.*

Thank you very much, Bill. I feel compelled to comment about your introduction. I want to say first that I'll bet there is not another soul in this room who disagrees with the Department of the Interior, is there?

Secondly, Bill mentioned my being Special Assistant to the Secretary of Agriculture. I have had the pleasure of serving with only two cabinet members in my 43 years. I served with Secretary of Agriculture Earl Butz, and now serve with Secretary of Interior Jim Watt. I'd like to think I'm the guy that gave them the strength to speak out. But, in no way have I been associated with writing jokes for Secretary Butz, nor do I do music appreciation for Jim Watt!

I'd like to know which camera belongs to the State of South Dakota. I understand that they're taping this conference. I want to say hi to Bill Janklow! I want the rest of you states that are not taping to know if you had the courage to sell a little water to ETSI, you, too, could afford to tape this program. Bill, I'm glad to see your money is well spent.

It is a pleasure to return to my old stomping grounds. I graduated from Iowa State University, a little parochial school about 35 miles north of here. I attended that University for three years, three months, nine days and six hours, during the 1960's. You might wonder why a desert rat, such as myself, would bother to go to Iowa State University. To be candid with you, I was advised by those more senior than myself, those who were wise, that if I would go to Iowa State University, I would find a very tough, but excellent economics program; I would discover the summer and winter climate would be very conducive to staying in the library studying, and I could be assured I would not be distracted by a winning football program. The reason I love Iowa State University — it's the only place I've ever been that everyone's description was actually true. If you've never seen Nebraska roll over you 54-0, you haven't lived. As a result of my experiences at Iowa State University, I came to hate most other Big Eight schools.

It is appropriate that a New Mexican, in exile in Washington, D.C., come here to speak very knowledgeably about the Pick-Sloan Plan. You must know that I know a lot about it. The euphoria of returning to the scene, though, has been lessened to a degree by the news that I've heard since I arrived here. That news is the Missouri River basin states are beginning to act friendly with one another. They are beginning to solve mutual problems. They are beginning to look down the road. This news is somewhat depressing to someone from the Southwest, who has coveted the water in the Missouri basin for a long time. It's going to be much more difficult for us to rip you off if you get together and decide you're going to manage your water resources collectively. We'd rather take you on, state by state, than to deal with a strong organization. I say that in jest, to make the point that the solution to most of your problems, in my view, will necessitate first a strong, congenial, cooperative Missouri Basin States Association, supplied with a lot of leadership.

People in the Missouri River basin oftentimes don't understand water problems. You need to live in the desert of Arizona or New Mexico sometime to begin to understand just how precious water resources are. It rains here all the time, or most of the time. However, I begin to hear concerns that we had years ago in the West, the concerns about water scarcity. The challenge to state supremacy in water resources is as serious in the Missouri River basin as it is anywhere in the United States right now. You are beginning to be as rambunctious as California and Arizona were twenty years ago. You are just now beginning to realize you need to quantify your water resources, you need to really understand who controls these water resources and how they have been managed. You're beginning to feel the pressure, or I hope you're beginning to feel the pressure, from competitive uses and competitive users. I will tell you right now, as a southwesterner, I will continue to covet your water, and there are a lot of other people who are going to covet your water. There are even new users in the Missouri River basin who are going to covet water within the basin.

Looking at problems in this part of the world, you have to admit the most serious problem is the Pick-Sloan Plan has not been completed. I've spent a good share of my life, in the Department of the Interior, hearing of Oahe, Garrison, O'Neill, Narrows, and other famous projects the Bureau of Reclamation has been involved with over a long period of time. I've done battle with FERC and others over ultimate development. I have asked myself, "How in the world can we possibly stand in Washington, D.C., and fight the good fight for ultimate development, when at the rate we're going, we know doggone well there's no new projects or ultimate development will occur at the pace we're going?"

But we have to question, "How is the Federal Government going to be involved in the future of the Pick-Sloan Plan program?" That is speculative. In the spirit of speculation, let me say in the next 5½ years of the Reagan Administration, you could have a very bright future in the Pick-Sloan Plan, but that's going to be driven by the states, and by the organizations such as this one. You will need these organizations because there are other organizations, on a national basis, that do not want you to complete the Pick-Sloan Plan. There are organizations that do not want development, do not want growth, and have never seen the value of water resources development, either for people or for fish and wildlife. If you lived where I have lived in New Mexico, you would understand that until we built the dams in New Mexico, we didn't have fish habitat or fishermen. Until you dam it up, the river runs periodically and often not enough to sustain fish and wildlife. Sometimes I begin to wonder if the people who are against water resources development understand developments support both people and fish and wildlife. You have people here who, over 40 years, have addressed the needs of the Missouri River basin. Build on this case — you will need a strong organization.

I understand the program yesterday was fantastic because leaders sat together and remembered how they put this whole thing together. Forty years from now, some of us are going to sit together and talk about some progress, but we need to keep in mind development is a long-term proposition. Long-term propositions are often poor short-term political opportunities. You talk to Congressman Myers, who is a long-term Congressman. God bless him, he's managed to make it 16 years — but I am a short-term politician. I have committed myself to the Reagan Administration for a short period of time. A lot of other people, including Jim Watt, Bill Gianelli, and others have also. Most politicians have a planning horizon of 2, 4, or 6 years, depending on the job. If you happen to be a Senator, you serve 6 years and if you happen to be in the Administration, you serve 4 years. If you happen to be in the Congress, you have a 2-year planning horizon. The problems we are going to address are longer term. Now, that brings a special need, if it's a long-term problem and you're dealing with short-term politicians. You're going to have to have some other kind of institution to carry the long-term ball. So, your organization, and perhaps there should be other organizations, is the approach to the long-term nature of finishing the Pick-Sloan Plan.

Now, what do we need as an Administration? What do we need if I were to think in long terms as a politician? What do we need from the Missouri River basin states if, in fact, we are going to complete this plan? Ultimately you must solve the adjudication problem. Somebody sued me over this adjudication problem recently; over the sale of water service to a modest little pipeline venture in South Dakota and Wyoming. I would anticipate others want to sue either the Corps of Engineers or the Bureau of Reclamation, as future adjudications are made, particularly when they are made for those activities that, somehow, are counter to the vested interest.

We need to find out what the Indians are going to claim in water resources in the Missouri River basin. We talk about it, but we need to be reminded that, since 1908 — the date of the Winters Doctrine — we haven't settled the Indian water claims in the Missouri River basin states. We need to discover the Federal Government claims. What are our Park Service holdings here? What about the Fish and Wildlife Service resources? We have Bureau of Land Management land in the Missouri River basin — how much water is it going to claim? We need to settle these adjudication questions.

The upper basin states have pushed me hard to talk about the power and beauty of compacts — I thought I'd pause here to see if I was on the right track. Perhaps

DR. GARREY E. CARRUTHERS
ASSISTANT SECRETARY OF THE INTERIOR
FOR LAND AND WATER RESOURCES

Dr. Carruthers was appointed to his present position by President Ronald Reagan in 1981. His departmental responsibilities include policy development and administration of the Bureau of Land Management, Bureau of Reclamation and the Office of Water Policy. Prior to joining the Department of the Interior, Dr. Carruthers served on the faculty of New Mexico State University and as Acting Director of the New Mexico Water Resources Research Institute. During his tenure at New Mexico State University, he also served one year (1974-75) as a White House Fellow and Special Assistant to the U.S. Secretary of Agriculture. Dr. Carruthers holds a Bachelor of Science degree in Agriculture and Master of Science degree in Agricultural Economics from New Mexico State University. He received his Doctor of Philosophy degree in Economics from Iowa State University.

I had the lower basin states in mind. I happen to believe that ultimately you're going to recognize that the Pick-Sloan Plan, that was settled on by the Congress and signed by the President of the United States, is really not all you're ever going to want in a compact arrangement. I happen to be very pro-compact because I come from a part of the country where they have been very effective, especially when you run out of water. You're not ready for a compact now because you haven't run out of water. When you run out of water 40 years from now, 30 years from now, 20 years from now, my consulting fee will be reasonable, and I'd like to come back to give you my lecture on the power and beauty of a compact agreement.

But you need to start thinking about it, because we are in a long-term situation here, aren't we? You should consider the flexibility of compact arrangements. Recognize that, in a compact, you can also take into consideration Pick-Sloan conditions and the Pick-Sloan Plan. You might even encompass surface versus sub-surface control as has been raised in **Sporhase,** and with **El Paso v. New Mexico.** Maybe it's necessary we look at compact arrangements for sub-surface. You can accommodate water quality and water quantity problems in a compact arrangement. And you know, to have a bona fide, legitimate, blue ribbon compact, all ten states would have to ratify the same language, which makes it a powerful document. Now I recognize, and have recognized before groups such as this, that there would be some disastrous outcomes from all of you *finally* agreeing on how you're going to adjudicate water. There would be a great depression in the legal industry in these ten states. Additionally, there would be federal judges out of work as a result of your ability to work out the problems the way you see fit, as opposed to the way they see fit.

The second thing you're going to need as you look at the federal perspective, is to develop a financial basis for water resources development, if you are going to finish the Pick-Sloan. Sometimes when I feel eloquent, I refer to it as "cost sharing." This is the only Administration, to my knowledge, to present two cost-sharing proposals in the same week. I don't care whether you like the Bill Gianelli version or the Department of the Interior version, both refer to the need to develop new partnerships. The Federal Government is eager to find new partners. Under various scenarios, we'll take private investment, we'll take county government investment, city investment, state investment, 4-H Club investment. We don't care where the investment comes from, but we need new partners. Now, that is not exactly the way the Corps of Engineers and the Bureau of Reclamation have done business in the past. They generally have sought the finance from the Congress, and we put projects together. Occasionally we would let others manage a shelter house or two, here and there, but most often, the Federal Government has managed the project. If you are going to be financial partners with us, then perhaps you may want a little bigger say in how that development is going to occur.

Our greatest partnership opportunities — and I don't believe you ought to be against it — are in areas like hydroelectric power generation, and municipal and industrial water, where we can actually franchise the functions to either the private sector or to state and local government. Others can provide the capital to build this aspect of a project, and then they can have the revenue, charge interest, and recover their investment. Some argue the capital must come from the same capital market so what difference would it make? I just hope the ten states don't have the same kind of budget problem that we have in Washington, D.C. It would help us to move some of that capital out of our responsibility and into someone else's responsibility. With cost sharing, the only disagreements in this Administration are not the numbers and not the concept. What we disagree with are the issues of up-front financing, and how much up-front financing should actually occur. There are some in the Administration, including myself, who feel that up-front financing can be discriminatory toward certain states. I fought the battle, others have fought another battle, and it is one of those issues in an Administration that we just can't seem to settle.

The other issue, and it deals with Pick-Sloan, is how much of cost sharing ought to be applied to projects already authorized. There are some who view an authorized project, if it hasn't been funded, as a new start with the strictest application of cost sharing. There are others who believe there have been commitments made by the United States Government that must be kept, and that while cost sharing, per se, is okay, it does not mean you can have the strictest application of those rules and regulations. There is a difference of opinion. The solution — we need to be creative. I've heard of one state that's considering a water tax to be used to develop their own water development fund. Oklahoma and Wyoming, as I understand it, have used severance tax funds to develop a water development fund to make loans and grants for water development. There may be other possibilities. We have some politicians now who are willing to take a peek at the possibility of raising power rates, and developing a power rate base fund that would be earmarked for Pick-Sloan or Colorado River basin, when they wanted to augment their water supply using weather modification. We said, "Okay, if you'll increase the power rate." We suggested the seven states increase the power rate about half a mill and we would assist them in developing a weather modification program based on a federal/state partnership. The benefit cost ratio on that, as I recall, was somewhere in the nature of 7 or 8 to 1, as calculated by the Bureau of Reclamation, which puts it in the reality range of about 4 to 1. We were discussing this morning the possibility of increasing Pick-Sloan power rates. The Pick-Sloan mill rates for power are the lowest in the nation for publicly-generated power. Pick-Sloan power is charged at 6 mills per kilowatt-hour. New Mexico, my home state, has 38 mills per kilowatt-hour, New Jersey 46 mills per kilowatt-hour, and California 57 mills per kilowatt-hour for publicly-generated power. It seems to me there is some room to increase power rates as a means of enhancing revenue for development. You may want to consider this option here and I'll tell you why — if, in fact, it ever happens, it's not going to happen in Washington, D.C. It can't happen in Washington, D.C. It must happen as a result of a collection of ten states in the Pick-Sloan basin saying, "That is a good way for us to raise some additional revenues to finish the Pick-Sloan program."

The third thing you need, as far as I am concerned from the federal establishment, is a political coalition. The old water leadership is gone. It used to be one could go to the Hill, when Pick-Sloan was being built or when the big projects in California were being put together, and 4, 5, and 6 powerful people got the legislative job done. The Biz Johnsons and the Aspinalls come to mind as people you went to see. They had such stroke, provided such great water leadership and could put together the package, form the coalition get the support and launch a project in very little time. We don't see that kind of powerful leadership, nor do we see those coalitions anymore. We have some people who are trying very hard, some who have just entered the arena. Senator Abdnor comes to mind. Senator Abdnor from South Dakota has a sincere desire to provide water leadership. Senator Armstrong from Colorado has shown a great interest in promoting water development. The two Senators from Wyoming — Wallop and Simpson — have indicated great support for water development. I see the leadership forming, but most of them are young, having just arrived in the Congress or the Senate in the last five or six years. We need a political coalition. It has become more popular, in Washington, D.C., to attack water projects than to support them. If you understand politics at all, when they have over 50 percent, you lose. My best reference is the Garrison Diversion Unit — speak to the North Dakotans regarding their problems with coalitions.

We have a long-term problem. We need a long-term political coalition. Politicans come and go and they have a 2-, 4-, or 6-year planning horizon. You need a bigger institution, with a lot more leadership to see that those politicians with the short-term planning horizons also have visions of a long-term solution to the Pick-Sloan Plan. We have been most responsive in this Administration to a couple of governors who have taken the initiative to come to Washington, D.C., tap on Jim Watt's shoulder and say, "Okay, we've got to get on with the program. We've got to make some moves." I give Governors Janklow and Olson from South Dakota and North Dakota a great amount of credit for vision to approach us and say, "Let's get on with it, let's get something going here. We know Oahe's in trouble, we know Garrison is in trouble, is there some other way we can work on water development?" That's political leadership. That's the kind of strength and foresight we need. Perhaps this is the beginning of the coalition. You can get a plan named after you if you'll do that. I've named the James River program the Olson-Janklow Plan when I'm in North Dakota, and it's the Janklow-Olson Plan when I'm in South Dakota. But we're making progress. You people in the water community would be surprised how quickly we have moved on that program, simply because we had two governors who were committed to water development, and had brought along with them congressional delegations that were equally committed.

I would argue that we wait to be recognized as pro-water development, pro-state leadership, and state primacy, but a government willing to go into the water business with you. The President said it would not be business as usual, so we've changed things in this Administration. We redid the principles and guidelines to offer flexibility in planning. We proposed cost sharing. We have advocated state rights. We did away with federal non-reserved rights. We set up a policy body to negotiate Indian water claims. We talked about New Federalism. We even went into new starts, and the Bureau of Reclamation and the Corps did, in fact, promote some new starts. We didn't get very far because the Congress disagreed until this cost sharing thing was settled. But most of all, we went back into the water business, and we're looking for new, effective partners in the Pick-Sloan area. If you know of a strong, congenial, cooperative group, spiced with leadership, we might just want to make, in the long-term, a final pass at completing the Pick-Sloan Plan.

Good to see you all again.

The States Perspective

Mr. John Acord, *Assistant Administrator, Water Resources Division, Montana Department of Natural Resources and Conservation.*

Last March I was asked to present the states' perspective of the Pick-Sloan program at the 1983 Nebraska Water Resources Conference. My perception at that time was that there were at least two different states' perspectives. There is an upper basin perspective and a lower basin perspective. Well, what's the upper basin, and what's the lower basin? You can look at that in different ways, too. For planning purposes in the Missouri River basin we've very often considered upper basin anything above Sioux City, Iowa, which would include the States of Montana, Wyoming, North and South Dakota. You can also look at the headwater states as being upper basin; that would include Montana, Wyoming and Colorado. Or you can look at the Pick-Sloan Plan and the O'Mahoney-Millikin Amendment, where they determined that everything west of the 98th meridian would receive the diversionary benefits of the Pick-Sloan development. There you pick up Montana, Wyoming, North and South Dakota, Colorado, Nebraska and Kansas. Well, that kind of outnumbers Iowa, Missouri and Minnesota. The more I thought about it, the more I thought that for this presentation, that may not be a good approach. I think we've got enough upper basin, lower basin conflict to deal with and why should I exacerbate the problem when we're here to educate.

So I tore up what I'd written, I threw out my notes from the Nebraska Conference, I picked up the phone and started talking to people from the other basin states. I hope I'm able this afternoon to give you some of the perspectives of the states of the Missouri River basin. If I don't, I'm sure you'll hear about it.

I've been asked to give the states' perspective on the future of additional Pick-Sloan Missouri River basin development. Now I'd like to give you just a thumbnail sketch of each state's perspective (with the exception of Minnesota) on the future of the Pick-Sloan development. Being from Montana, I'm always inclined to start, you know, in the upper basin, the headwaters area. In deference to my good friend, Bob Dunkeson, I think I'll start with Missouri. Bob reported to me that in Missouri they felt that most of the reservoirs that had been planned under Pick-Sloan have been built, and those that haven't been built will never be. He pointed out that the Pick-Sloan Plan, and I think most of these came out of the Pick Plan, had identified a number of sites but those have been changed over the years. There were also extensive plans for levees. Bob reported to me that there were something like 60 units, less than 20 of which have been built. He thinks there are one or two more that are in planning and may be built. One of the problems with the levee proposals is that much of the lower Missouri is impractical to levee, because in many cases units to be protected are cropland, the valleys are narrow and it calls for high levees to protect a relatively small amount of land, so the economic payoff is low.

Apparently in some places if there was less room there were proposals to build sea walls, which really gets out of the realm of economic feasibility. In discussing Missouri's future under Pick-Sloan, I ascertained from Bob that most of the assumptions I'd made were essentially correct. Missouri would like to maintain levels of flow for water quality and navigation. They are also concerned about the level of those flows in the lower basin, through Missouri, that are adequate to supply the diversion that exists in Missouri, diversions for municipal and industrial water supply, for cooling thermal electric power plants. In addition to that, they have a very significant concern for water quality. They want volumes of water available to assimilate the water pollution affluents that are returned to the stream.

Finally, they are concerned with present protection and enhancement of recreation. It was Bob's observation that they see the Pick-Sloan system moving from construction to management, especially in terms of the Missouri reservoir system.

In Kansas I was happy to reach Joe Harkins before he went on the planning trail to get public input into their State Water Plan. Joe reported to me that they are skeptical in Kansas about any future development under the Pick-Sloan Plan. Their draft water plan assumes that nothing else will be built under Pick-Sloan. They have a number of planning assumptions included in their draft plan, and I'd like to relay those to you. First, since there has been no development under Pick-Sloan for a number of years, it's difficult to plan on any Pick-Sloan projects in the future.

Secondly, there has been a lot of development in Kansas under Pick-Sloan and the choice sites have been developed. The remaining sites are of such low priority that even if the federal support system for financing water development is turned back on, the Kansas projects probably would never be very high on the national priority list.

Third, as Garrey Carruthers pointed out, and he's not the only one, Congressman Myers also mentioned it, there are going to be some requirements for new financing and cost sharing. The cost sharing concept has caused those in Kansas to look at buying additional storage and develop existing reservoirs as opposed to putting new money into expensive new water development projects. In the face of this federal cost sharing, they're moving in the direction of looking at options other than big development projects, but they haven't totally ruled them out.

In a nutshell, Kansas feels that there are 24 federal reservoirs existing in the state. They have contracted to take water out of nine of those reservoirs and are now looking at contracts for water on seven more that are strategically located and hopefully will satisfy many of their future needs.

I talked to our good President Bill Crews from Iowa about some of the Iowa concerns, and if you haven't already read it in the paper, Iowa does have some concerns, but not primarily about the Pick-Sloan developments in Iowa. Bill felt that generally they had received everything that they'd been promised, but those promises have turned into problems and they are now trying to solve some of those problems of degradations and loss of fish and wildlife habitat. The concerns that Iowa has now for the future of the Pick-Sloan development are generally basinwide. They would like to see additional future development, but they want it to be both environmentally and economically reasonable. They have concerns for navigation; they also have concerns for degradation and effects on recreation. The channelization that has been developed for navigation has caused problems in ground water. It has caused problems in eliminating oxbows and riparian habitat. Degradation can have very serious adverse effects on the fish and wildlife resources. So their concerns are of the future of stream development and not to aggravate the situation. However, Bill was kind enough to recognize, for my ears only, that upstream states deserve some of the development that was promised them under the Pick-Sloan Plan.

JOHN E. ACORD
ASSISTANT ADMINISTRATOR, WATER RESOURCES DIVISION, MONTANA DEPARTMENT OF NATURAL RESOURCES AND CONSERVATION

Mr. Acord has been in his present position since 1977. He held previous positions as Chief of Resources Planning (1972-77) and Planning Director (1970-72) for the Montana Water Resources Board.

Mr. Acord represented Montana on the Missouri River Basin Commission from 1973 to 1981, and served as its Vice-Chairman from 1977 to 1979 and Acting Chairman from October 1977 through November 1978. He has also been a member of the Interstate Conference on Water Problems Board of Directors since 1974, and served as its Chairman in 1981-82. He has represented Montana on the Western States Water Council since 1972.

Mr. Acord holds a Bachelors degree in Chemistry from the College of Great Falls, Montana, and a Masters degree in Bio-Chemistry from Montana State University.

Dayle Williamson was gracious enough to provide me some information about the Nebraska situation. As we've heard over the last couple of days here, there are some things happening in Nebraska. North Loup is being built, but O'Neill is still pending. There are other units identified under Pick-Sloan that might be possible, such as the Crofton Unit and the Cass-Otto project, which apparently is near Weeping Water, east of Lincoln. One problem with that project is that water is probably needed only one year out of ten, and it would be a pumping project out of the Missouri main stem; but if we had another prolonged drought like occurred in the early thirties, that project would pay for itself in very short order.

Dayle did mention the high plains diversion, or the possible high plains diversion; he didn't think it was very likely. I would also report, in passing, that I talked to Harvey Banks the other day and he said we can lay high plains to rest because it would take such massive subsidization that he felt it would never happen. At least he wasn't worried about it happening in his lifetime or mine.

There are some other potential projects in Nebraska that could be built if they could get Pick-Sloan designation and be assured of getting power out of the Pick-Sloan program. We know that this provides low cost power to irrigation units and would probably be on the order of 6 mills as compared to about 40 mills.

In terms of navigation, Dayle Williamson admitted that there is a concern about continued navigation. Apparently there are 3 to 3-1/2 million tons of shipping on the river and the potential is for 20 million tons. He mentioned a four-state navigation compact which the Missouri Legislature has authorized, and the governors are entering into discussions about, but pointed out that in Nebraska there may be a problem. They had a similar bill passed March 7th, 1980, which approved the governors talking about a navigation compact, a barge compact, but that bill expired July 1, 1981. There is a question right now whether Governor Kerrey is authorized to talk about navigation compacts.

I think Bob Neufeld succinctly pointed out the concerns of South Dakota, but I did talk to him about the future of Pick-Sloan, and I would reiterate his concern about Lake Andes-Wagner, about Cendak, and about ETSI. I think we have to recognize that ETSI, under the agreement with South Dakota, is a limited term agreement, and it's one that we conceptually authorized under the water marketing agreement, adopted back in what, 1973, 1974, 1975, wherein the Corps and the Bureau entered into an agreement that the Bureau would market the water from main stem reservoirs. The Bureau then offered to the states the opportunity to market that water for industrial purposes. So far, Montana is the only state which has an agreement and that hasn't gone anywhere. We've got a block of water, but not too much interest in it. Until ETSI, there was no other state agreement. North Dakota has issued some water permits for water out of Garrison for synfuel development, and that is the extent of the water marketing agreement.

Which brings me to my discussion with Vern Fahy, and anytime you talk to Vern about water development, you end up talking about Garrison. I don't understand the determination and perseverence of the people from North Dakota. Though, I do understand it, and I can sympathize with it. We all know that Garrison is under way, but very significantly modified because of outside forces; that is, forces outside the basin. I already mentioned that North Dakota has permits for the Garrison water system to provide water for a gasification plant.

In Colorado, Bill McDonald told me that they only have one Pick-Sloan project, the Narrows unit, which they are concerned about. It's the only one authorized and if they're lucky enough to get it, it'll be the only one that's ever built. The Narrows Project, which was reauthorized in 1970, has been mentioned here today or yesterday. It had a repayment contract signed in 1976 and had appropriations, but they got caught in the freeze of the Carter Administration in 1977. Colorado is hopeful that they might have something in 1984.

Wyoming, George Christopulos tells me, doesn't have any Pick-Sloan developments which they're considering right now, but George is very concerned that options remain open for further development in Wyoming of Pick-Sloan projects.

And I think that jibes with the attitude of the State of Montana. I would hasten to point out that I checked this with my boss this morning and I'm pretty sure it's right. There are a number of modified Pick-Sloan projects that have been identified in Montana under the Level B studies, both in Yellowstone and Adjacent Coal Areas, and the Upper Missouri Level B Studies. None of these are major projects, but we may see Pick-Sloan authorization for smaller projects in order to acquire the benefits from power revenues. It's a very similar situation to other states. As I mentioned, we have some possible water marketing from Fort Peck and perhaps from other Pick-Sloan reservoirs for industrial purposes, but primarily, goals for the most likely future are energy related. I think it points out a significant difference between this area and the four states upstream. If we have any industrial development at all, it's not going to be of the kind that you've seen in Missouri. Very likely it will be only energy industry oriented, and that's largely due to the geographic location and the lack of transportation.

That pretty well sums up what I've learned from the states about their perspective, but I'd like to make, if I may, just a few observations. There may be in this whole situation more similarities than differences. We all want municipal water supplies. We're all concerned about industrial water supply. Even though major benefits for flood control are downstream, we also get flood control upstream. We get flood control out of Yellowtail, Canyon Ferry, Fort Peck, Garrison. We all benefit from it. We're all concerned about water quality. The better the water quality, the less it costs us to supply that water to our own state beneficiaries. How many of you here fish for the wily trout? I'll bet it's a bunch. We're concerned about that too. Irrigation, recreation — admittedly, there may not be that much irrigation downstream, but if you want to, water is going to be there.

I think there are outside forces working against implementation of the Pick-Sloan Plan. I think Garrey indicated I may be right. There is reduced federal funding for water development, a new requirement for nonfederal cost sharing in water development. One thing that is hard to recognize, but I think was mentioned yesterday, we haven't had a prolonged drought like we had in the early thirties. We have one- or two-year droughts. People get excited at the end of the second year and start talking about water development, but then the rains come or the snowpack increases and we're really not that concerned. And, you always hear about the problems of surplus crops and the fact you don't need any more irrigation. But there is major competition between navigation and irrigation.

In the discussion yesterday, Ed Weinberg pointed out, in his discussion of the birth of the Pick-Sloan Plan, the 'shotgun wedding' due to war between navigation and upstream development. Does that mean that because of the conflict now that we again gird for battle? I certainly hope not. I'd hate to believe, after some 40 years of participation in the Missouri River States Committee, the Missouri Basin Inter-Agency Committee, the Missouri River Basin Commission and now the Missouri Basin States Association, that the states of this basin haven't learned to communicate, haven't learned to work together, haven't learned to trust each other.

To the Directors of the Association I would charge that, as administrators of water, as water policy advisors, we have the forum and the opportunity to develop the analytical tools and data necessary to provide technical solutions to the issues of the basin. It seems to me that if we do our jobs, then we have the opportunity to supply possible solutions to those who can effect the political solutions, the governors, the legislators and Congress. I think we should get on with it.

I'd like to end with a quote from Vern Fahy, in an address he made in South Dakota last fall, and I quote "I am convinced that when knowledge replaces emotion, we will find that there are more than adequate supplies of water to fulfill the Pick-Sloan agreement terms without detriment to any state in the Missouri River basin".

Thank you very much.

The Local and Private Perspective

A Private Industry and Local Perspective

Mr. John W. Neuberger, *Manager, Public Affairs, Northern Plains Natural Gas Company, and Director, Papio Natural Resources District, Omaha, Nebraska.*

Introduction

I want to first compliment the directors of the Missouri Basin States Association (MBSA) for agreeing to study the meaning of the Flood Control Act of 1944 and organizing this conference on the Missouri Basin's Pick-Sloan Programs. It's needed and timely.

This is the first time I've been asked to give a perspective on only one area of this basin's water use! As a strong supporter of comprehensive basin planning, it will be difficult to stick to only one area of water use. Nevertheless, I've promised to stick to my specific role this afternoon; that is, to put on my private and local sector hat and by summarizing the data we have, take a look back over our shoulder and then look into the future and help define the future of additional Pick-Sloan Missouri Basin Plan developments. This is a task that smacks of needing to know about as much as Solomon, who back in the 10th Century, B.C. was noted for his wisdom and reputed to be a very wise man. Likewise, after reviewing the Pick-Sloan Plan accomplishments and hearing from Bob Hipple, Gus Karabatsos, Ed Weinberg and Paul Harley yesterday afternoon, I've concluded that General Lewis Pick and Glenn Sloan were indeed very wise and courageous builders.

From an industrial and municipal point of view, regions which want to attract industry must meet several requirements in terms of water supply and particularly water supplied by river storage developments.

First, no industrial activity takes place without an *adequate, dependable, long-term* and *reasonably-priced supply,* nor does industry thrive with too much water, especially when it's located in a river's flood plain. This quickly brings one to the point that a river system like the Missouri had to be controlled and managed in order to attract and accommodate industrial growth. I see the Pick-Sloan Program as the stepping off point that began "controlled management" of the Missouri River basin surface run-off. I see the "ultimate development concept" as the intent of Congress and I support assistant solicitor Coldiron's finding that now is not the time or environment to change course on cost allocations.

But, how about this for a compromise: Maybe we need to put some of the authorized and inactive projects in a bank — a "Pick Sloan irrigation project bank," if you will. As agriculture production and foreign exports of our irrigated crops are needed, we could pull them out of the bank and bring the lands into production, a project at a time.

Editors Note: Several photographic slides were used in this presentation but are not included here.

Municipal, Industrial and Energy Water Use in the Basin

Now let me add another emerging category, energy, or M, I and E water use. The first observation that one needs to make about M, I and E water use in the Missouri basin is that it is relatively small when compared to the total basinwide consumption.

The data that I have examined to illustrate this point came from two sources: 1) National Water Assessment — 1975 and 2) Output from the Missouri Basin States Association — Missouri River Basin (MBSA-MRB) Water Accounting System.

I've been careful to identify each source of data on both my tables but on the slides, the artist left the footnotes off so I'll want to make sure which is which. To satisfy my own questions, I made a quick comparison of the 1975 depletions data for both studies and have it summarized in my first slide. Even though the MBSA water data system uses 15 functions while the National Assessment used only seven, the difference in depletions calculated was less than one percent. Pretty close, so I concluded the data from both systems might just be in the ball park!

So I looked first at the 1975 National Water Assessment data and had our artist make this illustration! It shows only five percent of the basinwide consumptive use was for the benefit of M, I and E. The bucket in this slide represents the entire Missouri basin and the "little dipper" illustrates the total consumption from the basin of each of seven water-use categories.

In 1975, while consumptive uses totaled 17.5 million acre-feet, water yield to the mouth of the Missouri was over 65 million acre-feet.

JOHN W. NEUBERGER
MANAGER OF PUBLIC AFFAIRS
NORTHERN PLAINS NATURAL GAS COMPANY

Mr. Neuberger assumed his present position in April 1983 after serving as Manager of Governmental Relations for Northern Plains Natural Gas Company since January 1981. He has held previous positions as Director of the Department of Water Resources for the State of Nebraska (1977-81); Chairman of the Missouri River Basin Commission (1972-77); Staff Advisor to the Assistant Secretary for Water and Power Resources, and Deputy Assistant Secretary for Water and Power Resources, U.S. Department of the Interior (1969-72); and General Manager of the Papio Watershed Advisory Board (1965-69). Mr. Neuberger is a Registered Professional Engineer and holds Bachelor and Master of Science degrees from South Dakota State University. He was elected to the Board of the Papio Natural Resources District (Nebraska) in 1982, and was appointed to the Nebraska Water Independence Congress in 1983.

The seven categories and their consumption percentages are: M & I, 2.8 percent; industry (self-supplied), 1.2 percent; mining, 0.7 percent; steam electric, 0.4 percent; rural domestic, 0.7 percent; livestock, 2.7 percent; and irrigation, 91.5 percent.

You can see that M, I and E water users have not required an exceptional amount of water, especially when one considers the number of people who were directly affected and benefited. Later on, we'll take a look at what our water planners believe M, I and E will consume in the future.

A second observation one needs to make from the water use data is that M, I and E water consumption from the Missouri River main stem is almost the same as that from the tributaries. Using the Water Data System computer, I compared depletion amounts from along the Missouri main stem to the depletions for the entire basin. I was surprised to find that for 1975, slightly over 50 percent of that year's M, I and E depletions were from or near the Missouri's main stem water supply! As this third slide shows: In 1975, 339,000 acre-feet of water was utilized from tributaries for M, I and E and 353,000 was utilized from the Missouri River.

A third observation based on the Water Accounting System is that M, I and E water consumption from the Missouri River main stem is vastly different between upper and lower basins. As was expected, due to the population distribution, in 1975 the M, I and E water consumption for the lower basin below Sioux City was about nine times as great as for the upper basin. Along the upper basin, M, I and E consumption for that year was less than one percent of the total 1975 main stem depletion, while the lower basin consumed 39 percent of its main stem annual depletion. My fourth slide illustrates this comparison and also puts the M, I and E water consumption into perspective with the main stem average annual depletion.

Because it's readily available off the MBSA's Water Data System, let's look at 1978 quickly.

Municipal Water Use — 1978

Total basinwide depletions for municipal water use amounted to only **444,000** acre-feet in 1978 or 1.7 percent of total basin water yield that year at Hermann, Missouri. A large portion of water diverted by municipalities is returned to the natural water system soon after its primary diversion from the stream or reservoir. State water laws ensure that water for municipal users usually enjoys priority over other uses, largely because drinking water is essential to life.

Industrial and Energy Water Use

For the entire Missouri Basin in 1978, consumption of water for industrial and energy users accounted for only 1.1 percent (296,000 acre-feet) of the 1978 annual flow at Hermann, Missouri.

Most of the water diverted is used for cooling or disposal of other industrial by-products and then returned to the stream. In relation to total depletions, very little water is actually consumed by industry. It is true that industry's use of water primarily affects water quality. This fact has resulted in both national, statewide and industrial efforts to monitor and prevent industrial water pollution.

A Look Ahead

Now what about the future water requirements for M, I and E in the basin? I asked myself who has the best crystal ball? *Since MBSA's 15 category Water Accounting System has not been used for planning projections to date,* I examined the 1985 and 2000 projections published in the National Assessment for the Missouri Region. Since I've already made observations from the 1975 consumptive use, let me show you how the water planners of 1976-77 thought M, I and E requirements will grow in the future by referring to this fifth slide.

First, look at M and I basinwide. If you believe these projections, you would soon get the picture that M and I consumption will double in the 25-year period of 1975-2000 from 823,000 acre-feet per year to 1,530,000 acre-feet per year! By looking at what they projected for 1985 and realizing that's only two years away, I feel these projections in reality are now very high!

Steam electric, on the other hand, they said will demand a greater growth basinwide of about nine times in the same period, 75,000 acre-feet to 713,000 acre-feet by the year 2000. It seems more likely that this projected growth rate has also slowed considerably and without the use of the Water Accounting System computers, I was unable to update these projections quickly. I was also unable to determine what portion of this future use will be from the Missouri River main stem and what will be from the tributaries, or what will be the ratio or percentage from the upper basin and what will be lower basin.

Overall, M, I and E's appetite for water was projected six years ago to increase from 5.1 percent of the total basin consumption to about 7.9 percent of the projected basinwide consumption of 28.5 million acre-feet in 2000. While this is not taking place, as it will seemingly be much less, it is reasonable to expect that average annual water yield at Hermann, Missouri, will still be in the range of 52,000,000 to 58,000,000 acre-feet, and the M, I and E share will move from about 1.5 percent of 2.5-3.0 percent of basin yield.

At this time let me repeat one point, in order for industry to flourish and expand in the Missouri basin, state and basinwide programs and policies must demonstrate that an *adequate, dependable, long-term* and *reasonably-priced* supply of water can be obtained.

The idea of water as a scarce commodity in the Missouri River main stem is a long way off. However, it seems certain then that four factors will determine the adequacy and future requirements for many of the basin's municipal and industrial water supply systems in the years to come: 1) population growth; 2) increasing per capita use; 3) migration of people to the urban areas and 4) expanding economic activity.

From my perspective, I have two suggestions to offer: First, we need to devise the means to keep the future industrial water requirements into a proper perspective. There seems to be unnecessary confusion as to which federal, state, local or private water development projects and proposals are "reasonably likely" to ever be built and reach an operational stage. This list of "Selected Missouri River Basin Water Use and Transfer Proposals" was published in February 1982 by the Missouri Basin States Association. This included congressionally authorized and funded projects in addition to very preliminary concepts or inquiries of industrial and groundwater recharge proposals.

I submit that preliminary types of projects or initial inquiries about projects is not the best time to include them on such a proposal list. Accumulation of incremental depletions from these very preliminary type of projects will exaggerate the demand for water, causes confusion and often prolongs administrative actions and litigations. Whenever all types of proposals are listed, one can predict the outcome . . . opponents to the project develop unnecessarily and insist that depletions from even the most preliminary of proposals be evaluated in each project's impact analysis.

To show how stretching future depletions draws unnecessary political reaction, I draw your attention to the wholly new concept introduced in the 98th Congress by Congressman Bedell, in H.R. 1749. This would allow one state to veto a use of water by another state — a so-called "sister state sign off" — even though that state is using waters within its "own share" of the stream system.

A "mandatory compact" has also been suggested in the course of the hearings on H.R. 1010, a bill primarily to provide a limited federal right of eminent domain to coal slurry pipelines. Those who argue for a uniform requirement of mandatory interstate compacts for the Missouri River ignore both the vast water supply in relationship to the "reasonably likely" depletions and the historical background of such compacts. Historically, interstate compacts have been only one method of protecting the rights of downstream states. Interstate compacts of several types have been negotiated by affected states only under carefully established ground rules and then only as circumstances required. It is my observation that the proponents of a mandatory compact for the Missouri basin main stem have proposed an impractical cure that is clearly worse than the ailment. The compacts they advocate, by incorporating the principle of "the sister state sign off" will make rational water planning and management by states impossible and more federal involvement would seemingly follow. Industrial projects could readily be caught in between the differing views of states and left open to the legal challenges of competing industry.

The rights of neighboring states in interstate waters are well protected by existing laws as implemented by Supreme Court doctrine. The interstate stream compact approach has proven itself a valuable and important alternative for resolving interstate water rights disputes, providing stability for investment and economic development. It was never, however, intended to be used as a device for permitting one or more states to intrude into the domestic decision-making of a single co-riparian state, especially if that state is using waters within its own share of the stream system. If there is a real concern that an upstream state's water use will invade the rights of other states, there are already two options for reasonable response: (1) the state or states asserting the injury can exercise the option to request that Congress authorize compact negotiations covering specific problems or (2) present the perceived injury to the U.S. Supreme Court for declaratory judgement and injunctive relief. For these reasons, I believe proposals to require interstate compacts as a pre-condition to interstate water transfers are unnecessary and should be opposed by both private and public interest.

I have yet another suggestion for attracting industry and for those interested in assisting industry to meet their future water needs. The private sector should be encouraged to work together with government and be permitted representation in the studies and deliberations of the MBSA as the "fine tuning management" of the massive Pick-Sloan Plan goes forward. Possibly this could be accomplished by having the governors of each state appoint a representative from industry to serve as advisors or resource people that can help improve two-way communications.

It seems quite obvious to me that some work will be needed soon to update the projects for M, I and E water depletions from the 1975 National Assessment, and industry representatives would be a logical addition to those studies.

With those suggestions, I'd like to close. I thank the Conference Planning Committee for this opportunity to provide a private and local perspective to this conference. This is indeed another historical and important meeting of Missouri River basin water interests. I was pleased to be here to learn and honored to be asked to participate.

A Power Industry Perspective

Mr. Philip A. Hauan, *General Manager,*
Northwest Iowa Power Cooperative, LeMars, Iowa.

Our gathering here in conference these two days is an "alliance of friends." It is in that spirit that I am pleased to have been asked to share thoughts with you during this conference on the Pick-Sloan Missouri Basin Plan.

The subject, "The Future of Additional Pick-Sloan Missouri Basin Plan Development," covers a multitude of critical issues and problems. Difficult decisions must be made with the best interest of this region and the Nation foremost in mind.

In 1946, President Harry Truman, in his State of the Union Message, stated:

> *The rivers of America offer a great opportunity in our generation in the management of the national wealth. By the wise use of federal funds, most of which will be repaid into the Treasury, the scourge of floods and drought can be curbed, water can be brought to arid lands, navigation can be extended, and cheap power can be brought alike to the farmers and to the industries of our land.*

Those were words of great support for federal participation and leadership in water resource development. And, yes, what great progress was realized in the 40's. People dedicated themselves to continue building upon the foundation laid by Teddy Roosevelt in the early days of the century and upon the contributions of Franklin D. Roosevelt during the 1930's.

Progress was disrupted in the 50's when the "no new starts" policy of the Eisenhower Administration came along. This policy was of deep concern. It was particularly disheartening to those people who in financial partnership with their government were beginning to realize the fruition of hard work. The struggle was difficult. Rural people continued to develop their lands, homes, schools, and communities. And, in many places such as the Missouri River basin, people were striving to bring an adequate and assured power supply to serve the needs of the farms and rural areas. These folks realized that a serious attempt to jeopardize their ultimate well-being was under way. It was 1958, and the situation was serious.

It was also in 1958 that Mid-West Electric Consumers Association was formed. At that time about 50 rural electric, municipal, and power district representatives met in Minneapolis and took steps to formally organize. The reason for formation was that the rights of preference customers were being threatened and construction of federal facilities was near standstill.

The Western States Water and Power Conference was held in Billings, Montana, in 1960. The speaker stated:

> . . . *The growth of economic power depends on many things. It depends on a national policy of full employment. It depends on money and credit that will encourage investment policies. It depends on a healthy farm economy. But most of all in the Western half of our Nation, it depends on vigorous, planned development of our natural resources* . . .

The speaker was John F. Kennedy who, following his appearance at that Billings conference of Western States Water and Power Consumers, was elected President of the United States.

Following President Kennedy's election, this Nation continued its progress in multipurpose resource development. The Midwest and West you see today is the result of many years of expanding policies and actions that recognized how to structure federal partnerships for the public good. The federal investment in the Midwest and West was one of the soundest investments to have ever been made in the future of this Nation — and it still is.

PHILIP A. HAUAN
GENERAL MANAGER, NORTHWEST IOWA
POWER COOPERATIVE

Mr. Hauan joined Northwest Iowa Power Cooperative, headquartered in LeMars, Iowa, in 1959. He served as Office Manager, Administrative Assistant, Business Manager and Assistant Manager with NIPCO before being appointed General Manager in 1981. Mr. Hauan is active in numerous civic organizations as well as professional and business associations. He has a Bachelors degree in Education from Drake University and has taken postgraduate work at the University of Colorado.

As America moved into the seventies, the "no new starts" policy returned and lasted for eight years. This was followed by four years of a Carter Administration, crowded with overzealous environmentalists unaware of the needs of people.

Now, comes the 80's and for nearly three years plus, we have been inundated with rhetoric as to Administration support for water and power development. And, according to Secretary of the Interior James Watt, one of the biggest resource crises to face this Nation in the next decade is going to be water shortage. I'm sure we all agree. But, progress is elusive. In the face of this impending disaster, federal development and utilization of public resources continues in a state of depression.

Today, more than 100 years of economic and social reform are in the process of being destroyed. The farm programs of this Nation are seriously threatened; assaults have been launched against the consumer-owned utilities — especially rural electric programs; and water and power programs of the Midwest and West are being undermined — especially public ownership, development, and utilization of public resources.

Today's climate fosters an uncaring attitude for the farmer and he is being hard pressed into an extremely unfavorable economic position. Water and power programs that are so essential to rural areas of the Midwest and West are in the process of being abandoned by the Federal Government. These are devastating realities which are being heaped upon the rural economy at a time when it is reported the government plans to spend a shocking, embarrassing, and almost unbelievable $5.7 billion a week or a total of $1.5 trillion over the next five years for defense. It should be pointed out that only little more than one week of spending at this rate amounts to more than the total investment in the reclamation water and power program during its entire 80-year history.

This Nation must have a strong defense — few would disagree. But, defense is not the only measure of security. Defense spending does very little to ensure a stable and lasting economy and the security of the Nation requires many things in addition to guns. Full employment, a healthy farm economy, and wise and prudent development of our water and land resources are not least among these requirements.

Many of the obstacles placed in the path of Midwest and Western water development come from strong Eastern voices in Congress. They complain that the benefits of water development have produced a random array of questionable benefits more responsible to the vagaries of seniority in Congress than to anything else. Water and power projects in the Midwest and West should not be made a part of deficit spending talk — they are not!

At least three so-called new philosophical areas regarding water and power development are frequently expressed today. These are: (1) "Cost-sharing", which embraces and encourages the formation of federal-private partnerships, non-federal resource development, and unrealistic cost-recovery proposals; (2) An "Assets Management Program," described as an effort to get rid of surplus government property labeled as costing the government money and which apparently includes land and water resources as well as property; (3) An abandonment of the "rate based upon cost" philosophy in the sale of federal power, which means much higher rates for the consumer and the placement of surcharges on the farmers and consumers who use federal power as well as the loss of access to federally produced power through increased cost and non-federal development.

Cost-sharing and non-federal development hold deep concern. Facilities bought and paid for by the consumer are on the verge of being given away, development solely for profit appears to threaten the multipurpose concept of river basin development, and federal marketing of power under public benefit standards is being discouraged. Taken in concert with land and property disposal propositions, cost-sharing and non-federal development appears to herald the end of "public ownership of public resources."

Not too long ago, the cost-sharing plans of the previous Administration were solidly rejected. Today, we are being told to accept much more costly proposals. But, in most cases these proposals appear to be unworkable and it is doubtful that they can provide the lasting and generative benefits realized from existing water and power developments.

Several states have indicated an ability to put up large sums of money to participate in cost-sharing schemes. It is fortunate that some states can afford to participate, but the cost-sharing policies that have been loosely tossed about will undoubtedly exclude a lot of worthwhile projects — especially when it comes to the cost-sharing ability of the less financially able states.

What about those less financially able states? It has been emphasized that heavy consideration and priority will be given to states with up-front or cost-sharing money. And at the same time, it is indicated that special consideration will be given to the less financially able states. It has also been stressed that application of the cost-sharing policy will be administered in accord with Presidential prerogatives. Just think about the implications contained in such policy.

Cost-sharing and non-federal development will also, in a short time, lead to the destruction of preference in the sale of power from public resources. Several times in decades past we have seen administrations attempt to abandon federal power development. In the 50's, the Eisenhower Administration "partnership" would have had investor-owned utilities construct facilities at federal dams. These schemes contained the provision that the power generated would belong to the investor-owned utility. Several such attempts were made and all were designed to eliminate serving the needs of public bodies and cooperatives.

It's appropriate at this point to refresh in our minds that a workable form of cost-sharing as related to Western irrigation and power projects has been a beneficial and practical reality for more than 80 years. Water and power projects in the reclamation program return the federal investment to the Treasury, most of it cash-on-the-barrelhead — with interest. It should also be remembered that when the federal investment for development of a dam, power plant, etc., is repaid, the facility remains in public ownership and continues to provide public benefits. Under cost-sharing and non-federal development proposals, it appears that ways are being explored for such facility and/or resource to provide benefits to the private entity forever.

The potential harm to the public interest through non-federal development of public resources can be seen in proposals already being considered in Congress. One such bill contains provisions apparently allowing a non-federal developer to recover his original investment, get tax benefits, turn a profit on the transaction, and collect royalty payments forever. The bill also prohibits preference in development which serves to defeat "first right of refusal" for customers who have already bought and paid for existing facilities.

The Federal Government developed its existing cost-based concept of pricing power from federal dams in order to help pay for projects. But, in the 1940's and 50's this power was hard to sell. In the main, market forces wanted the power but at a ridiculously low price. The consumer-owned systems, anxious to assist in a program of benefit to the West, paid a fair price based on cost for power. From this arrangement came the development of an assured supply of power for difficult to serve rural areas, farms, and communities. Consumer-owned electrics built their systems on this cost based philosophy. Today, there are all sorts of proposals to abandon this concept as well as the consumer. Most schemes either embrace the idea of killing off the consumer-owned utility by raising the price of power to an unfair level of competition with the private utility or are designed to fatten the coffers of the U.S. Treasury on the backs of the consumer.

According to federal officials there are enthusiastic offers to buy government facilities, and private entities are being encouraged to apply for some of this so-

called surplus property. According to Administration spokesmen, everything from entire water development projects to power transmission lines are being considered for sale. Such talk is frightening.

The idea of water resource development as well as public resources and facilities being abandoned by the Federal Government to the market place should be solidly rejected. And, as long as we are talking about resources, the idea of shifting invaluable public lands into private ownership should also be solidly rejected. The use of such resources to balance the budget, increase cash flow into the Treasury, or to create a partnership with the private sector detrimental to the public interest is unacceptable. What is needed in resource development is an understanding and caring for this, and for future generations. What is needed is an expansionary economic policy, free of waste and inefficiency. Water and power development can be an expansionary economic policy free of waste and inefficiency, and it is anti-inflationary. Water and power development has a lasting, generative and stabilizing impact on the economy of the Nation.

Once again in history we are faced with a policy calling for "development of renewable resources for private gain in partnership with the Federal Government." And, once again we must meet the challenge with total rejection of the policy. The Federal Government must not be permitted to abandon its longstanding partnership with the people.

Rural areas are losing clout, strength in Congress has dwindled, and water and power development does not enjoy the broad base of support of past decades. The time is upon us when there must be a new joining together. We must rise above the stagnant position in which we find ourselves. We must find the way to satisfy today's requirements as well as to meet the challenge of the future.

There are no magic solutions to the problem. The fact of the matter is that this Nation has been struggling for at least the past 12 to 15 years trying to fix something that isn't broken. The Federal Government must remain the chief partner in resource development. The Federal Government must increase its effort in the area of development and utilization and must expand operations in water resource management. The Federal Government must form a renewed commitment to responsible development of multipurpose water resource projects and to public ownership and utilization of those projects, and it must do the job in line with the historical people-partnerships that have been formed.

This Nation, especially those of us here today, should strongly oppose the passing of benefits from public resource development through private toll gates. Federal financing and development of all economically viable hydroelectric projects at worthwhile multipurpose federal dams and at undeveloped sites should be vigorously supported. We should demand that these resources be developed in a cohesive and comprehensive manner and that maximum possible benefits be provided in the public interest — and in public ownership.

Of course, developments should and must be repaid with interest by the beneficiaries. Proper and just consideration of benefits that are shared on a national basis should be treated as such and cost-shared accordingly. But, development should not be subject to the market test nor to the whims of the political application of flexible cost-sharing schemes.

Because of public concern for environmental values and because of the limitations on the water supplies remaining for development in some areas of intensive water use, there has been a substantial shift towards better and more comprehensive water resource management to provide a balanced program for all beneficial purposes. Adverse water quality conditions now receive additional attention, groundwater overdraft conditions are being better defined, and flood plain management procedures are being further developed. As a result, much of the future increase in water needs will be satisfied by better management and more balanced procedures to manage the resource for all.

We must create a new "togetherness" that will make certain this great land of ours is not plundered, but protected, utilized, conserved, and shared. The challenge must be viewed as one requiring the formation of a cooperative group or groups dedicated to bring order and stability out of the utter chaos that today exists in labor, agriculture and in the water and power programs of the Nation and more specifically in the Midwest and West.

A Local Perspective

Mr. Don "Skip" Meisner, *Director, Siouxland Interstate Metropolitan Planning Council (SIMPCO), Sioux City, Iowa.*

It is a pleasure to make this brief presentation concerning a local perspective of the Pick-Sloan and companion projects, and the future of the Pick-Sloan Plan development. Congratulations to President Crews, Mr. Fahy and Mr. Hamon on this important activity of the Missouri Basin States Association.

I would like to address briefly the *benefits* and *problems* of the Pick-Sloan Plan. The problems include physical, economic and political types. I will then discuss the current imperative and suggest actions.

As you will note, my comments on benefits are local. Those comments on problems tend to be regional or basinwide.

Benefits

Project benefits from my perspective are flood control, navigation, irrigation, bank stabilization, hydropower generation, recreation, domestic supply, municipal supply, stock, industrial and mining. This is not a legalistic view of the Pick-Sloan Plan elements.

1. *Flood control* is most important.
2. *Navigation* — Navigation is important for a variety of reasons. Cheap way of moving grain and other bulk commodities. Our studies indicate that navigation has considerable impact on the Siouxland economy.(1&2) We also believe competing transportation rates are impacted due to the presence of commercial navigation. Navigation is also a chief reason that we enjoy a rather constant flow during most of the year and is a dependable supplier of water to the Mississippi River navigation system. Navigation, in turn, greatly increases recreational uses of the river.
3. *Irrigation* will grow in the Missouri River Valley, particularly in the Missouri River flood plain where water may be made available with minimal pumping.
4. *Bank stabilization.* Hundreds of thousands of marginal acres have been drained and cultivated. We have, on the other hand, flooded thousands of acres with the pools created by dams.
5. *Hydropower* is a great benefit and has been discussed previously. Additional power will become available by changes in generation technology, instream generators and retention structure modification, and perhaps by additional reservoir construction.
6. *Recreation* is important, very important on the lower reservoirs. It is important in the Sioux City area and could be even more so with the institution of the Missouri National Recreation River.
7. Domestic, municipal, stock, mining and industrial water uses are also important.

Problems remain: Some of our problems are endemic of the upper Midwest, some are direct results of the Pick-Sloan Plan, others are of a human origin. These problems can be classified in several ways. For simplicity, I have grouped the problems as physical, economic and political. You will note, however, that many of the problems are related.

Physical Problems

- *Degradation* — This local problem has allowed the massive loss of wetlands, woodlands and water surface areas. These losses have much more significance than they had in the 1930's and 1940's during project design. In the Sioux City reach, the degradation has been approximately 8' since the closure of the Gavins Point Dam.
- *Aggragation* — This occurs in the lower stretches and would be solved if we could solve the degradation and erosion problems.
- *Storage* — I don't believe that we have adequate storage in the system.
- *Flood Plain* — We have done a poor job of flood plain protection in the channelized sections. The encroachment of urban and residential uses into the flood plain will cause problems that will plague us for the foreseeable future and is an indictment of local and state governments.
- *Water Quality and Erosion* — Soil loss and sheet erosion are problems for which we and posterity will pay. We still experience serious *lateral high-bank erosions on several stretches of the Missouri,* as well as tributary streams.

Economic Problems

The Missouri River basin suffers several major economic problems. We should understand that water resource development is a part of a larger issue of our economic well-being.

They include:

- Unstable prices for commodities
- Relatively high energy costs(3)
- Relatively high transportation costs
- Comparatively low per capita income(4)
- Comparatively low federal aid ratio(5)
- Comparatively low defense expenditures(6)
- Continued out-migration since 1930(7)

Political Problems

- Continued loss of congressional strength
- Individual project conflicts
- State water rights, lawsuits and retaliatory action
- Bickering among states, their agencies, private groups and federal representatives
- Lack of state water plans

Shift of responsibility from the Federal Government to state government for water resource development. No history of midwestern states in water except regulation and some planning. (The South Dakota example in funding indicates change. The creation of the Nebraska Water Resource Congress could also indicate change.)

- Lack of coherent national water development policies.
- Administrative cost sharing schemes.
- Polarization of groups, politicians, institutions and governments.
- Lack of consistent, dependable and predictable water resource development leadership and policy at the national and state levels.

DON "SKIP" MEISNER
DIRECTOR, SIOUXLAND INTERSTATE METROPOLITAN PLANNING COUNCIL

Mr. Meisner was appointed Director of SIMPCO, with offices in Sioux City, Iowa, in 1965. SIMPCO is a tri-state, regional council of governments serving local governments in Iowa, Nebraska and South Dakota. Prior to his present position, Mr. Meisner was employed by the City of Sioux City. He is also active in national and regional water policy issues, and currently serves as Chairman and Co-Chairman of the Perry Creek Flood Control Coordination Committee and the Big Sioux Flood Control Committee, respectively. He holds a Bachelor of Science degree from Morningside College and a Masters degree in Political Science from the University of South Dakota.

Imperative

We have many needs and issues that must be addressed. Currently we act like 6-year-olds in the backyard fighting over water rights of the garden hose.

Needs of Pick-Sloan Plan

- Additional storage
- Problem resolution, degradation, aggragation, erosion, pollution
- Mitigation of losses from project (fish and wildlife)
- Continued, cooperative study of the issues described in this report
- Cooperative mechanism to better address needs (both funding and conflict resolution)
- Business and industry assistance in plan development, potential and coalition building
- Congressional coalition to secure more favorable results of federal program and policy
- Navigation in some form through greater lengths of the river
- The appropriate governments in the Missouri River basin should work together in resolving problems, maximizing opportunities and supporting, where possible, projects and priorities of other states. This process must include the entire area of well-being and not just water resources development. We must not take a legalistic view of all issues as a starting point. Goals must precede process.
- States must develop state water use plans and become true partners in water resource development.
- The states must develop a compact to address water allocation, appropriation and pricing and related concerns. If this does not occur, an authority or strong commission must be developed to perform the necessary actions. If we don't, the courts will make decisions.
- The Federal Government must be involved and be a leader in water resource issues planning. These planning activities should include water marketing, study of project uses, cost allocation and repayment, flood plain delineation and acquisition. Perhaps funding could include a complete rethinking of the basin account where proceeds come back to the basin for water and related development.

So we have great benefits of the Pick-Sloan Plan. We have problems. The problems of the basin are more than just water. They are first, economic and second, political. We need to organize, solve problems, develop opportunities. The alternative is to be less than we can be as an area and as individual states. The alternative is not acceptable.

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CONFERENCE WRAP-UP

Bill Crews:

At this time it is my pleasure to give the conference wrap-up or where we go from here, from my viewpoint as MBSA President. I think we have had a successful conference. It was our hope to provide a review and an understanding of how the Pick-Sloan Plan came about, what was included in the original Plan, what has been developed, what has not been developed, and what some of the resultant issues and problems are from those activities. I think everyone is agreed that we have received a tremendous understanding of how the Plan came about.

Also, I hope we have obtained an understanding about how things have changed since the Plan has come about. There are problems which remain, like the stabilizing of the farm economy in parts of the basin, but there are also new problems that now confront us — the environmental degradation that has occurred and the recognition that we can't continue developing without factoring in environmental concerns. Another new problem is the reduction in federal support for water development that we've heard about. But not only are there new problems, there are new opportunities as well.

We need to maximize our cooperation and similarities and try to minimize our differences. You have heard much about the positive features of the Pick-Sloan Plan. But we have not heard, I don't think, an adequate description of some of the negative things. This points up another thing we need as we go forward — objectivity. When concerns of one section of the basin, whatever section, seem to be misunderstood or not recognized by others, we need not always feel that each comment that is made needs to be answered by an opposing comment, but again go forward and try to work on our similarities and therefore reduce our differences. We also need to realize that all those who question future development are not always against development. We have learned from the mistakes of the past that development needs to be very carefully managed, very wisely managed, and that the environmental concerns that aren't always brought forward in people's comments are very real. In the last few years, the people of this country have consistently and steadfastly maintained that they are willing to pay the extra costs it takes to maintain and enhance the quality of our environment.

So we have some problems that remain from when the Plan was developed. And we've got some new problems, but I want to stress again that we have an awful lot more opportunities. Bud Viessman indicated earlier today how things have changed. Some of those things I have mentioned, like the emphasis from quantity to quality and environmental concerns. One of the things toward the end he mentioned that I think is hopeful for the future is new irrigation methods. A fact that the downstream states need to understand is that the irrigation methods the upstream states are looking for now are different than what they were in the Plan. Downstream states are concerned about that, but I think the upstream states are also concerned about that and are also knowledgeable about such concerns.

Another thing Bud Viessman mentioned which has changed is the analytical methods for studying water resource issues; and as we go forward from here, we need to continue to work on our water accounting system. If we can get the water accounting system worked out to where we feel comfortable with it, I think it provides an awful lot of promise for us throughout the basin to play around with the numbers, play around with what may or may not happen, and get a better idea of what the impacts are going to be. Hopefully we will see the impacts will not be as great as some fear but that we can go together in the future and really try to satisfy everybody's concerns to a certain degree or at least to a satisfactory degree.

That leads me again to where we go from here. Those of you who attended our meeting yesterday know that we held our state water planning seminar to try to continue the communication, coordination and knowledge of what each state is doing. We have completed an out-of-basin transfer issue analysis that gives an idea of some of the literature on issues involved in out-of-basin transfers. We have held this Pick-Sloan Conference to increase the awareness and understand-

ing. We are continuing to work on our water accounting system to the point where it will hopefully provide a very valuable tool in future water management.

What's on tap? As we mentioned in our meeting yesterday, we will be continuing the analysis of options for interstate agreement on basin water management. Our Executive Committee is pledged to pursue development of recommendations on how the Association can facilitate resolution of future water use conflicts. So I think as we go forward from here we will have a growing understanding of how we differ but more importantly, how we are together and how we can try to work out our differences and continue to move forward. It's going to be a long, hard road. A lot of the press people ask me what we are going to do. If we had an idea of what we are going to do, we would probably be doing it. We have to continue to talk among ourselves, to kick around ideas and to continue that spirit of cooperation that has brought us this far and hopefully will continue. I feel very optimistic. We need to maintain our objectivity and our desire to do as much as we can, not necessarily to split up the pie as it is now, but to try to find out if we can't have a bigger pie.

I feel optimistic about the basin. I hope the Association will continue to play a major role in water resources development.

I would also like to express my appreciation before we close the conference to Vern Fahy, Bob Neufeld and Mike Jess for putting the effort into planning this conference; to the staff, Carroll Hamon, Don Ohnstad, Dave Peterson, and Pam Reynolds, for doing the very necessary and time-consuming activities to put on such a great conference; especially to all the speakers for their efforts, their research and for their fine presentations; and finally to all of you participants for your attendance, of course, but probably more important, for your support in helping us try to resolve these conflicts and to help us in the basin move on to a better life. I thank you for your attendance. I hope you have enjoyed it and learned something, and I look forward to continuing to work with you in the future.

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